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Statement: The Montana Petroleum Association offers the following information packet for consideration by the committee studying federal lands management. With the passage of SJ 15 no study of federal lands management would be complete without a review of this public information. MPA offers our assistance to the SJ 15 task force and will provide any information we can to the committee.

Attachments:

MPA Comments on Resource Management Plans: Billings, Miles City and the Hi-line

- These represent most of the oil and gas producing areas in Montana
- Significant additional restrictions to oil and gas development
- MPA has requested a total rewrite of each plan
- At least 5 years went into each RMP and only 90 days to review; all requests for extensions were denied including those from the Montana Congressional Delegation
- No Surface Occupancy restrictions on vast amounts of public land
    - 70% of public lands in Hi-Line Plan
    - 60% of public lands in Billings Plan
    - 50% of public lands in Miles City Plan

Montana DEQ Comments to BLM on air quality actions in the BLM Resource Management Plans

- Note comment in DEQ cover letter "DEQ is concerned that our federally approved authority to manage air quality resources within Montana has not been properly considered or embraced within the resource management partnership reflected in the draft RMP"

Proposed Hydraulic Fracturing Rules of Federal Lands

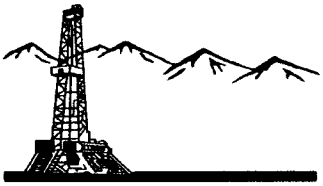
- IPAA-WEA comments are provided that encompass almost every oil and gas trade association in America.
- Governor Bullock's letters to Secretary Jewel expressing concern

Congressional Testimony by David Galt

- Extensive Concern about sage grouse and how the BLM National Technical Team was so flawed but still a driver for their sage grouse actions in their RMPs.

ENVIRONMENTAL QUALITY
COUNCIL. 2013-14

September 11, 2013 Exhibit No. 16



PUBLIC LANDS ADVOCACY

June 28, 2013

Mr. Jim Sparks
Field Manager
Billings Field Office
5001 Southgate Drive
Billings, MT 59101

RE: BILLINGS/POMPEY'S PILLAR DRAFT ENVIRONMENTAL IMPACT STATEMENT/RESOURCE MANAGEMENT PLAN

Dear Mr. Sparks:

On behalf of the Montana Petroleum Association (MPA), Public Lands Advocacy (PLA) and Western Energy Alliance, following are comments in response to the Notice of Availability of the Draft Billings/Pompey's Resource Management Plan (RMP) and Draft Environmental Impact Statement (DEIS) published in the Federal Register March 29, 2013. The signatories to these comments are all non-profit trade groups who represent the many facets of the petroleum industry. Our member companies have valid existing leases, current oil and gas production, and plans for future leasing, exploration, and production activities in the areas that will be directly impacted by the proposed decisions in the Draft Billings/Pompey's RMP.

INADEQUATE REVIEW PERIOD

We object that BLM denied our request for an extension of the review period. BLM has failed to afford interested parties adequate time to fully digest and provide coherent and substantive comments by limiting the review period to a 90-day window during which comments are due on three major draft RMPs. It is unrealistic for BLM to expect the heavily affected oil and gas industry, not to mention the general public, to have the ability to conduct an adequate review when they have been provided a very narrow window in which to review these three enormous documents. We believe BLM is making a rush to judgment without appropriate and accurate consideration of the impacts associated with the management considerations contained in the DEIS.

DEIS INADEQUACIES

The structure of Billings/Pompey's Pillar DEIS makes it extremely difficult for reviewers to track BLM's proposed management options because they are inconsistent among chapters while at the same time spread out among the various chapter sections in piecemeal fashion. Even the basic descriptions of the alternatives and their priorities are missing. One is forced to wade through countless pages of resource descriptions for each alternative in separate sections, forcing the reader to jump from one section to another to understand the proposed management. Moreover, the

pervasive inconsistencies throughout the documents make it impossible for reviewers to comprehend the changes in resource uses and management proposed by BLM under each alternative. We strongly recommend that BLM adopt a revised format for subsequent planning documents that provides resource and decision-related information in an easy to follow, consistent format.

FAILURE TO COMPLY WITH NEPA

The purpose of analysis under the National Environmental Policy Act (NEPA) as well as BLM's planning process is for BLM to publically disclose the potential impacts of various management strategies under consideration by the agency. Specifically, the CEQ NEPA regulations at 40 CFR §1502.9(a) directs the agency to *"make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action."* While BLM may have tried to explain its management scenarios by alternative in the DEIS, it has omitted any useful explanation of potential impacts associated with each of the alternatives selected for detailed review in the document as they relate to the Billings/Pompey's Pillar areas in any consistent manner. The regulation at 40 CFR § 1502.14, requires presentation of the *"environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public."* Additionally, the regulation at § 1502.16 requires a *"scientific and analytic basis for comparisons"* of the information provided in accordance with § 1502.14 necessary to support the comparisons. The BLM's planning regulations similarly require the BLM to estimate the physical, biological, economic, and social impacts associated with each alternative in the RMP EIS. 43 CFR § 1610.4-6 Absent a sufficient and consistent description of the potential environmental impacts associated with each alternative directly pertaining to the Billings planning area, BLM has failed to meet both of the *"twin purposes"* of NEPA, understanding potential impacts and public disclosure of said impacts. See Baltimore Gas & Electric v. Natural Resources Defense Council, 462 U.S. 87, 97 (1983). For this reason alone, the BLM must prepare a revised draft environmental impact statement. 40 C.F.R. § 1502.9(a)

We find BLM's use of Greater Sage-grouse data not directly applicable to the planning area highly problematic and outside the requirements of NEPA. While we recognize NEPA allows for the best available science to be used during planning, the fact that none of the data referenced by BLM applies to the lands and habitat under the jurisdiction of Billings Field Office cannot be utilized as the basis for decisions, particularly given that they are based upon data derived from intensively developed natural gas fields that are completely uncharacteristic to the planning area.

Further, BLM has failed to explain its rationale for selecting the Preferred Alternative. It is inadequate for BLM to simply identify a preferred alternative without providing detailed analysis that supports WHY such an alternative is in the best interest of the agency and public. According to the BLM's Land Use Planning Manual and Land Use Planning Handbook, II.A.7, pg. 22 (Rel. 1-1693 03/11/05), BLM must identify how the Preferred Alternative best meets the multiple use and sustained yield requirements of FLPMA. This lack of meaningful analysis constitutes a fatal flaw in the DEIS. Therefore, in accordance with 40 CFR 1502.0(a), we find the DEIS *"inadequate as to preclude meaningful analysis"* and recommend the agency prepare and circulate a revised draft

which provides the analysis necessary to support each of the management alternatives, including the preferred alternative.

INADEQUATE MAPPING PROTOCOLS

Another significant problem with the BLM's planning documentation is the 1-Km resolution datasets and 1:2,000,000 scale maps used in the BLM planning process. While this scale of maps may be a viable tool for multi-state or sub-continental planning efforts, it becomes totally meaningless at field office or even county level. With respect to the Greater Sage-grouse, datasets and mapping at these scales grossly mischaracterize historic and potential habitat by including non-habitat as well as overlooking microhabitat characteristics, especially in diverse and fragmented landscapes. Likewise, threats to sage grouse are also entirely overestimated when using sub-continental scale mapping, such as that used in the planning effort. It is ironic that when BLM requires maps from industry, they must be at a 1:24,000 scale rather than the scale BLM believes is appropriate for a much larger planning effort.

Most of the conventional literature regarding sage-grouse starts with the assertion that ~60% of historic range has been lost. This is based on work done by Schroeder et al in 2004, and has become the cornerstone of mainstream sage-grouse research. It too is at a 1:2,000,000 scale and provides the basis for much of the US Fish and Wildlife Service (FWS) and BLM policy regarding sage-grouse. Of great concern, however, is the fact that this scale provides wholly unsuitable data when conducting any analysis or planning at FO level.

The most recent paper by Knick et al concluded that sage-grouse lek abandonment will occur with as little as 3% human disturbance with a 3-mile radius of a lek. Unfortunately, their methods apply cumulative human impacts over the past 100 years to a static snapshot of lek status (active or abandoned). In other words, no consideration was given to the timing of the human disturbance with respect to the status of a lek in question. It is assumed that any lek abandonment was due to cumulative human impacts. This approach is unacceptable and our comments address these concerns.

ENERGY DEVELOPMENT IS A LEGITIMATE USE OF PUBLIC LANDS

Under the Federal Land Policy and Management Act (FLPMA), BLM is required to manage the public lands on the basis of multiple use and sustained yield. 43 USC § 1701(a)(7) (2006) " *'Multiple use management'* is a concept that describes the complicated task of achieving a balance among the many competing uses on public lands, *'including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and [uses serving] natural scenic, scientific and historical values.'* " Norton v. Southern Utah Wilderness Alliance, 542 U.S. at 58 (quoting 43 U.S.C. § 1702(c)). *"Of course not all uses are compatible."* Id. We recognize the difficult task the BLM faces to manage public lands in the planning for multiple use. However, oil and gas development is a crucial part of the BLM's multiple use mandate and the agency must ensure that oil and gas development is not arbitrarily limited in the RMP.

FLPMA clearly identified mineral exploration and development as a principal or major use of the public lands. (43 U.S.C. § 1702(l)) To that end, FLPMA requires the BLM to foster and develop mineral activities, not stifle and prohibit such development. It does not appear this was one of BLM's goals when preparing the Billings/Pompey's Pillar DEIS. Rather, it appears the BLM is intent upon limiting what it considers to be a damaging presence on the federal lands. The BLM must reconsider its view of oil and gas development when preparing the final EIS/RMP.

In addition to FLPMA, § 363 of the Energy Policy Act of 2005 (EPAct) requires federal land management agencies to ensure that lease stipulations are applied consistently and to ensure that the least restrictive stipulations are utilized to protect the resource values to be addressed. The DEIS also ignores established BLM policy which requires that "*the least restrictive stipulation that effectively accomplished the resource objectives or uses for a given alternative should be used.*" Moreover, BLM has failed to demonstrate that less restrictive measures were considered but found insufficient to protect the resources identified. A statement that there are conflicting resource values or uses does not justify the application of severe NSO restrictions.

In April 2003, the BLM directed field offices to comply with four Energy Policy and Conservation Act (EPCA) planning integration principles:

1) *Environmental protection and energy production are both desirable and necessary objectives of sound land management and are not to be considered mutually exclusive priorities.*
2) *The BLM must ensure appropriate accessibility to energy resources necessary for the nation's security while recognizing that special and unique non-energy resources can be preserved.*
3) *Sound planning will weigh relative resource values, consistent with the FLPMA.*
4) *All resource impacts, including those associated with energy development and transmission will be mitigated to prevent unnecessary or undue degradation (BLM 2003a)."*

Under EPCA BLM is required to identify impediments to oil and gas development. It was the intent of Congress that access to energy resources be improved as indicated in the Energy Policy Act and Conservation Act of 2000 and the Energy Policy Act of 2005. BLM recognized the intent of the both Phases I and II of the EPCA review when it issued Instruction Memorandum 2003-233, Integration of the Energy Policy and Conservation Act (EPCA) Inventory Results, into the Land Use Planning Process. Consequently, BLM Field Offices are now required to review all current oil and gas lease stipulations to make sure their intent is clearly stated and that stipulations utilized are the least restrictive necessary to accomplish the desired protection. Moreover, the IM directs that stipulations not necessary to accomplish the desired resource protection be modified or eliminated during the planning process.

Since the purpose of integrating the EPCA results into planning is intended to determine whether existing resource protection measures are inadequate, adequate or excessive, we recommend the BILLINGS BLM reevaluate its management decisions accordingly and make requisite changes to the FEIS. If BLM decides not to reevaluate its decision, we specifically request a response from BLM in the Final EIS explaining why this was not done.

It seems BLM intends to adopt a new policy whereby multiple use activities, including oil and gas development, will be held subservient to other resource values considered in the planning process,

echoing the obsolete belief that oil and gas development destroys air, water and fish/wildlife habitat. This is clearly the misguided basis for much of the document and the most of the alternatives, particularly the preferred alternative. Therefore, since the purpose of integrating the EPCA results into planning is intended to determine whether existing resource protection measures are inadequate, adequate or excessive, it is even more crucial that the BFO reevaluate its management decisions accordingly and make requisite changes to the FEIS. Discussion of the specific requirements of a resource to be safeguarded, along with a discussion of the perceived conflicts between it and oil and gas activities must be provided along with an analysis of available mitigation measures. Clearly, an examination of less restrictive measures must be a fundamental element of a balanced analysis and documented accordingly in the FEIS.

We also point out that documentation of the need for change is required by BLM's 1601 Planning Handbook at § VI, *Determining if New Decisions are Required*, Part D, *Documenting the Determination to Modify, or Not to Modify, Decisions or NEPA Analysis, which directs* that ***"it is important to document decisions to modify or not modify the land use plan or NEPA analysis when these decisions are reached as part of the formal land use plan evaluation process*** *(Section v). (Emphasis added)* We ask BLM to explain its rationale to exclude this requirement from the DEIS in final EIS.

When finalizing the Billings/Pompey's Pillar RMP, we urge BLM to ensure its compliance with the FLPMA, EPAct, EPCA, and its own guidance and handbook by reducing rather than increasing impediments to federal oil and gas leasing and development. As currently presented, the BLM has failed to comply with this policy because it is proposing huge new impediments to domestic energy development.

DEIS SPECIFIC COMMENTS

Following are document specific comments to aid BLM in ensuring a comprehensive and defensible revision to the current DEIS.

ADAPTIVE MANAGEMENT

Page 2-6, 2.3.4, Adaptive Management – *"The Department of the Interior Office of Environmental Policy and Compliance issued ESM03-6, which provides initial guidance to all agencies on the implementation of adaptive management practices for NEPA compliance. The Interior Department Manual 516 DM 4.16 defines adaptive management as "a system of management practices based on clearly identified outcomes, monitoring to determine of management actions are meeting outcomes and, if not, facilitating management change that would best ensure that outcomes are met or re-evaluate the outcomes."*

COMMENT: BLM has failed to explicitly describe the process of Adaptive Management it intends to use. While industry supports the goal of adaptive management, it will not be successful without the development of science-based monitoring protocols to assess and validate the effectiveness of federal land management actions, particularly with respect to regulating oil and gas development, such as lease stipulations and conditions of approval (COA) and to adjust management decisions in response to this monitoring. We recognize that adaptive management, if done properly, can assist

land managers through monitoring to validate whether the assumptions underlying mitigation measures are met and allow needed modifications to be made accordingly. BLM needs to clearly articulate its adaptive management policies in the planning documents. Simply referencing that it may be used is inadequate.

VALID EXISTING RIGHTS

Page 1-20, Planning Criteria – *"The RMP will recognize the existence of valid existing rights"*

Page 2-8, BMP, *"The purpose of the BMPs is to (1) reserve for the BLM the right to modify the operations of surface disrupting and/or disruptive activities as part of the statutory requirements for environmental protection, and (2) inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands"..."Mitigation measures would be applied on a case-by- case basis during activity level planning if an evaluation of the project area indicates the presence of important wildlife species seasonal wildlife habitat or other resource concern."*

COMMENT: As evidenced by the second statement as well as similar statements in several other DEIS sections subsequently addressed in these comments, this Planning Criterion appears to afford mere lip service to the goal of recognizing and preserving valid existing rights as specified in the first statement above, particularly when taken together with the numerous statements regarding mitigation and BMPs. We remind BLM that according to the FLPMA, the MLA and BLM's Planning Handbook, BLM does not have the authority to impose highly restrictive stipulations on leases after they have been issued. In sum, BLM cannot deprive operators of their rights to develop their leases in accordance with the terms under which they were issued. BLM is limited to negotiating with holders of valid existing rights to comply with newly developed restrictions.

With BLM's limited management authority under FLPMA, neither BMPs nor COAs can change the scope of existing lease stipulations. Nevertheless, it is BLM's apparent view that it has authority to apply similar restrictions on existing leases through the use of BMPs or permit COAs, possibly even prohibiting surface occupancy. We strongly recommend that BLM revise the proposed management strategies indicated to acknowledge the concrete limitations on management of existing leases established by existing statute and BLM policy by preparing a revised DEIS that fully recognizes its management limitations as dictated by FLPMA. In addition, BLM must acknowledge that when a lease is issued, it constitutes a valid existing right which cannot be unilaterally changed through the use of COAs or BMPs, including surface and timing restrictions beyond those identified in 43 CFR 3101.1.

COMPENSATORY MITIGATION

Page 2-9, *"Mitigation measures and conservation actions are Best Management Practices (BMPs), operating procedures, or design features that have been developed to avoid, minimize, rectify, reduce, or compensate for potentially significant adverse environmental impacts associated with surface disturbing or disruptive activities."* [Emphasis Added.]

Page 2-10, *"Even after avoiding and minimizing impacts, projects that will cause adverse impacts to resources typically require some type of compensatory mitigation".*

Page 2-68, Table 2-6.1, Management Common to All Alternatives, *"Utilize appropriate offsite compensatory mitigation to reduce impacts to wildlife habitat. This would be necessary if (1) all onsite mitigation has been accomplished and adverse effects have not been mitigated; or (2) if onsite mitigation is not feasible. Off –site mitigation would be applied as close to the affected area as possible and for the same or similar impacted species or habitats."*

COMMENT: We emphatically oppose the inclusion of compensatory mitigation under all alternatives and ask BLM to explain how it can be justified given the plethora of protective requirements with which industry must already comply to effectively reduce or eliminate impacts associated with oil and gas activities on public lands. It also ignores the principle of avoiding unnecessary and undue impacts, which is the cornerstone of federal land use policy. Industry is already obligated to conduct multiple resource surveys on behalf of BLM as well as to comply with numerous BMPs, COAs, restrictive regulatory thresholds, NEPA analyses, along with a host of additional federal requirements. We find it unconscionable that BLM intends to dig even deeper while failing to even disclose basic criteria, circumstances and the amounts when compensatory mitigation may be required. No clarification as to what constitutes a purported unacceptable level of change is provided in the DEIS. Further, what recourse will an operator have if it is believed such a requirement is excessive?

We have no doubt that without specific guidance, resource specialists will be disposed to require compensatory mitigation whenever it suits them, without regard for operator-committed mitigation measures. The fact that a lease has been issued by BLM is clear evidence that a certain level of impact is acceptable as dictated by the stipulations attached. When the operator proposes an activity, it must comply with these stipulations. FLPMA, MLA, the regulations at 43 CFR 3101.1-2, as well as BLM's 1624 Manual, directs that new stipulations cannot be applied to existing leases; this includes COAs or other measures that exceed the terms of a lease. Specifically, once a lease has been issued, BLM does not have the authority to prevent development unless the lease terms prohibit surface occupancy or development would result in *"unnecessary or undue degradation,"* which could not be mitigated. Under 43 CFR 3101.2, guidance is provided detailing what authority the agency has to modify the parameters of the stipulations in order not to compromise valid existing lease rights granted by the lease.

BLM has previously cited as its authority to address the mitigation of impacts from FLPMA §102(a)(8), *"...the public lands [will] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource and archeological values...."* However, we remind BLM that FLPMA §102(a)(12) further directs that *"the public lands [will] be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 U.S.C. 21a) as it pertains to the public lands."* [Emphasis added] Moreover, while FLPMA §302(b) states *"the use, occupancy and development of public lands must be regulated by the Secretary through easements, permits, leases, licenses, or other instruments,"* the agency must also fully acknowledge the rest of this section which clearly

directs that *"these instruments include, but are not limited to, long-term leases to permit individuals to utilize public lands for habitation, cultivation, and the development of small trade or manufacturing concerns."*

Compensatory mitigation directly conflicts with EPCA language which requires BLM to evaluate the extent and nature of any restrictions or impediments to the development of resources including: (B) post-lease restrictions, or delays on development for conditions of approval, applications for permits to drill, or processing of environmental permits. [See EPCA Phase II, page xxi]. We view this new requirement as a strategy for BLM to capitalize on industry's historic willingness to work with the agency to ensure mutually beneficial energy projects can move forward.

In proposing a program of compensatory mitigation, BLM has obviously failed to acknowledge the extent of industry participation in and funding for partnership programs such as habitat improvement projects, public land restoration programs, which, in nearly all cases, were entered into on a voluntary basis. Additionally, industry routinely pays for wildlife studies and inventories, such as wetlands, cultural, wildlife, and threatened and endangered species resources as well as project level NEPA documents. In light of the fact that BLM appears intent upon ignoring industry support and participation in partnership programs, direct support for resource surveys and NEPA documents that are properly BLM's responsibility, this new policy will likely severely curtail industry participation in partnership programs.

BLM is essentially establishing a new rule to require compensatory mitigation in areas it sees fit without consideration of lease rights. Moreover, it is evident that current commitments to operators with respect to APDs, rights-of-way or other projects could be modified as a result of this new policy. Contrary to FLPMA, such mitigation places more importance on aesthetic resource values over other uses, such as minerals and other commodity development. BLM must recognize that it is required to fully consider the need for mineral development along with the need for protection of other resource values and that in some cases the need for mineral development may actually outweigh the need for the protection of other resource values. As such, BLM must comport with EPCA. Namely, *"public land managers* [have a responsibility] *to identify areas of high oil and gas potential and to evaluate the effectiveness of mitigation stipulations and conditions of approval in balancing responsible development of resources with the protection of other valuable resources in the area."* [pg xxiii]

The industry coalition recommends that BLM eliminate "compensatory mitigation" from the Billings/Pompey's Pillar RMP because it is bad policy, punitive, subjective and will likely lead to litigation.

ALTERNATIVES

The DEIS fails to clearly identify the management goals and objectives for each alternative. While Table 2-6 describes the proposed actions under each alternative and Table 2-7 identifies the purported environmental consequences by alternative, the reader is left to guess BLM's what the overall objectives are for each alternative. This omission needs to be addressed when preparing the revised draft planning documents.

2.4.4 - Alternatives Considered But Eliminated From Detailed Analysis

COMMENT: We support BLM's decision to eliminate the "Conservation Groups Alternative" from the analysis because the "proposed actions and alternatives submitted by these organizations were determined to be substantially similar to those actions and habitat areas considered within the range of alternatives in this RMP" (DEIS at 2-16). The groups' proposal to add additional conservation measures for greater sage-grouse beyond those identified in A Report on National Greater Sage-Grouse Conservation Measures produced by the Sage-grouse National Technical Team ("NTT Report") and designate two additional habitat types is unreasonable as the restrictions in the NTT Report are already overly-restrictive and, in our view, their need is unsubstantiated.

Preferred Alternative

We object to implementation of the Preferred Alternative because it would restrict future oil and gas resource exploration and development without proper analysis and justification. Moreover, Alternative D fails to acknowledge BLM's obligation to manage lands for multiple-use, including mineral development, as required by FLPMA. It also fails to comply with EPAct and EPCA, which require the BLM to use the least restrictive lease stipulations to protect sensitive resource values.

The basis for BLM's highly restrictive management approach appears to be predicated upon the need to protect the Greater Sage-grouse. Unfortunately, BLM has relied upon scientific data which is flawed for a number of reasons, not the least of which is the inappropriate reliance upon general scientific conventions based upon male lek attendance, but also because it is too general to be extrapolated to the planning area, and because it is based upon development scenarios that are unlikely to occur within Montana. Moreover, recent findings scheduled for publication in the near future irrefutably demonstrate that sage-grouse are not extirpated by oil and gas activities and that with reasonable mitigation measures, such as limited NSO perimeters around active leks along with other reasonable mitigation as well as interim and final reclamation procedures, sage-grouse return to previously disturbed areas.

Lack of Support Documentation

Page 2-27, 2.5.1.1, Resource Uses and Support – [Under Alternative A] *Fluid minerals are available for leasing on 264,534 acres of the BLM administered federal mineral estate with standard lease terms. Fluid minerals are available for leasing on 369,048 acres of the BLM administered federal mineral estate with major and moderate constraints. Fluid minerals are not available for leasing on 39,730 acres of the BLM administered federal mineral estate.*

COMMENT: The DEIS fails to provide any information or documentation regarding the purported inadequacies of current management of the BFO. We recognize that the RMP needs to be revisited on a somewhat regular schedule. However, all proposed changes need to be clearly articulated in the planning DEIS to illustrate why any changes may be necessary. BLM has not explained why certain changes in management have been proposed and no information supporting such changes is provided in the DEIS

The DEIS indicates on page 1 of Chapter 1, "*The planning area ...includes 434,154 surface acres of public land and 1,835,484 acres of federal mineral estate in Montana and 4,298 acres of public land in Big Horn County, Wyoming.*" How is BLM currently managing the remaining 1.6 million acre mineral estate referred to in chapter 1 under Alternative A? It is important for planning documents to describe current and future management of the entire federal mineral estate.

AIR RESOURCE MANAGEMENT PLAN - APPENDIX

BLM's proposed management routinely exceeds its authority by attempting to control air emissions and air quality despite the regulatory boundaries included in the Clean Air Act (CAA). Under the CAA, only the Environmental Protection Agency (EPA) and its delegates have sole authority for such regulation.

Emissions Inventories

BLM intends to use the emission estimates used in the current document and plans to gather future emissions information for use in inappropriate model evaluations. For example, BLM proposes to require industry to calculate potential emissions to determine the applicability of the state's permitting program.

COMMENT: Industry already provides estimated annual actual emissions to the state for fee purposes. To determine valid modeling results, which conservatively estimate impacts, there must be a clear understanding of the emissions data and an accurate accounting of these emission estimates. The DEIS specifies BLM will implement significant mitigation measures on individual facilities based upon the results of the modeling. Without being allowed to review the emission calculations that will be used in future modeling, what options does industry have for public participation?

We are concerned because BLM typically overestimates emissions. An example of this is BLM's greenhouse gas (GHG) emission estimates. BLM projected emissions higher than actually recorded because existing federal regulations which oblige the use of numerous measures to reduce GHGs were ignored. Despite this oversight and BLM's resultant overestimated emissions, BLM was unable to find any significant impacts from the oil and gas industry. Nonetheless, we strongly recommend that BLM defer to reliable scientific methods to correctly project potential impacts.

AREMOD Modeling

AERMOD modeling was conducted and it was determined, even with this conservative analysis, that there will be no violations of the National Ambient Air Quality Standards (NAAQS).

COMMENT: BLM chose to analyze the PSD increments, which are the amount of pollution an area is allowed to increase. It is also important to note that PSD increment analysis does NOT apply in this scenario. This analysis is wholly inappropriate and is being misused. On page 4-16, BLM attempts to make a clarification to this analysis by stating, "*The following PSD analysis is not a regulatory*

analysis; its purpose is to provide context for evaluating potential air quality impacts." However, what is the purpose of attempting to provide "context" when the context being provided is inaccurate and inappropriate?

While the numbers documented in the DEIS show exceedances of PSD increments, this type of analysis is inappropriate for even evaluating air quality impacts. Therefore, we recommend it be removed from the document. We also point out that air quality management falls within the jurisdiction of the MDEQ, not BLM, making it only MDEQ's responsibility to implement the PSD permitting program for major sources. It is irresponsible for BLM to apply its flawed analysis on a wide scale using conservative estimates in an attempt to frighten the public into believing these could be real impacts. It is crucial for BLM to modify its approach in the revised planning documents.

Future Modeling Photochemical Grid Modeling

Page 4-21, *"Future photochemical grid modeling (PGM) results will inform BLM air quality management actions, as described in the ARMP in Appendix T."*

COMMENT: The PGM and emission inventory projects are being conducted outside of the accepted regulatory process. Moreover, there is no indication that BLM will afford the public an opportunity to comment on these future actions. We are extremely concerned that the oil and gas industry will be impacted by the results of these emission inventories and modeling exercises in the form of excessive mitigation measures being imposed on lease agreements for individual operations. While the DEIS indicates BLM will collaborate with AQTW and MDEQ on modeling protocol development for the future modeling; there is no mention of seeking industry involvement in this process. We strongly urge BLM to involve the affected parties, in particular the oil and gas industry, in future modeling efforts.

While not clearly documented, it appears that BLM intends to use its 2011 emission inventory to extrapolate figures to 2015 to aid in BLM's "*understanding*" of what new sources are or will be in existence. We acknowledge that it is reasonable to expect additional sources by 2015. However, any emissions estimates must take into account the amount of electrification occurring. Additionally, gas sales on the upstream side of industry are expected to increase significantly as pipeline availability increases. For example, within the last year industry has electrified hundreds of oil and gas wells and, as a result, no longer has natural gas lifting engines or gasoline-fired recycle pump engines. Furthermore, more gas is being sold from sites as the natural gas pipeline/processing infrastructure has been expanding, thus BLM's "*actual*" flaring data is NOT representative and are, therefore, unacceptable for use in extrapolating for future predictions. The DEIS also failed to take into account the reduction in emissions associated with the New Source Performance Standards (NSPS) [1] and the National Emission Standards for Hazardous Air Pollutants (NESHAP) [1] also known as Maximum Achievable Control Technology (MACT) standards. Implementation of these regulations will also reduce emissions in the planning area. This lack of attention to these rules leads to apprehension regarding BLM's commitment to accurately estimate emissions, and thus ambient impacts.

[1] 40 CFR 60, *et seq.* and 40 CFR 63, *et seq.*

Monitoring

Page 4-20, *"Due to the relatively low density of expected oil and gas activity in the planning area, criteria air pollutant concentrations are expected to remain low throughout the area."... "A qualitative description of potential air quality impacts is provided below for each of the criteria air pollutants..."*

COMMENT: Based upon monitoring data from Birney and Billings, MT, the qualitative analysis demonstrates expected compliance with the NAAQS. MDEQ is also operating a new air quality monitoring station in Lewistown, MT. This site will confirm the area's compliance with the NAAQS. Therefore, we strongly object to the agency's use of any newly created *"mitigation design value."* Since MDEQ already has an approved program along with the requisite expertise to handle the calculations of an appropriate design value, why does BLM feel compelled to develop a separate program? Moreover, the Clean Air Act has already established extensive actions based on actual monitoring data. Clearly, BLM should only use approved design values prior to implementing mitigation measures on sources in the planning area.

Mitigation Measures

Page 4-22, *BLM acknowledges that the planning area is an area of "good" air quality and states that it intends to use both monitoring and modeling data to "identify mitigation measures to address unacceptable impacts"*

COMMENT: We are disturbed that BLM has not defined *"good"* air quality or what *"unacceptable impacts"* would entail. As such, it is impossible to provide comments in any meaningful fashion when these terms are undefined and the information used to make these decisions has not and, apparently, will not be publically vetted.

Page 4-23, *"The adaptive management strategy for oil and gas resources provides the flexibility to respond to changing conditions that could not have been predicted during RMP development. The strategy also allows for the use of new technology and methods that may minimize or reduce impacts."*

COMMENT: As discussed earlier in these comments, this is an unacceptable and vaguely defined strategy. It leaves a great deal of uncertainty for the industry in planning development when there is no guarantee, even after they have followed all air quality regulations applied through MDEQ to comply with both the Federal and State Clean Air Act(s), that there will not be additional mitigation measures placed on individual minor sources.

The DEIS identifies a number of initial mitigations that BLM will implement upon completion of the planning documents. Several of the measures relate to fugitive emissions control. While the industry agrees fugitives must be controlled, MDEQ requirements for reasonable precautions (Administrative Rule of Montana 17.8.308)[2] fully meets the objectives for these measures because it

[2] While this is a Montana rule, it is federally enforceable via the State Implementation Plan (SIP).

is already required for all sources and allows the facility flexibility in choosing measures used to comply. Therefore, BLM's additional measures are unnecessary and need to be eliminated.

Page 4-11, *"Emissions inventory estimates were determined based on state and federal emission standards with one exception. Emission estimates for diesel drill rig engines are based on the use of Tier 4 non-road engine standards, which would be required by BLM as an initial mitigation measure."*

COMMENT: The State of Montana has sole jurisdiction to administer the EPA-approved air quality program. Furthermore, it has already been demonstrated that no exceedances regarding air quality in the planning area are projected, with the possible exception of localized areas near the oil refineries in the Billings and Laurel areas which is isolated to SO_2. Since SO_2 emissions throughout the planning area are considered negligible (as referenced in the DEIS), there are no real concerns regarding impacts associated with SO_2. As a result, the requirement to implement Tier 4 engines is unwarranted and costly and would unjustifiably exceed current statutory requirements.

There is discussion in the initial mitigation measures that sources will be required to consolidate facilities to reduce fugitive emissions. These consolidation determinations are both redundant and overly restrictive for the control of fugitive emissions because current regulatory requirements already fully address this issue. No additional requirements are needed from BLM.

We object that BLM intends to exceed both federal and state regulations by requiring compliance with a New Source Performance Standard (NSPS)[3] on sources for which that rule is not applicable. What is BLM's justification for exceeding established programs? The NSPS standards were applied nationally only after considerable research and public participation. This new requirement must not be arbitrarily applied as proposed, rather it should be eliminated from this and future planning documents.

While the *"Monitoring-Based Mitigation"* process is seemingly a very deliberate process to determine cause or contribution, the potential enhanced mitigation measures proposed are nothing short of excessive in light of that fact that BLM's determination is based upon a single source contribution of a single exceedance at a monitor. A single exceedance, even if the data is valid, does not constitute a violation of the standard and may not even be indicative of a trend or pattern. The potential enhanced mitigation measures themselves are uncompromising and in only one case may the possibility exist that BLM will take into account technical and economic feasibility. Also, the DEIS states that BLM can decide upon any additional measures it chooses. Once again, this is done with no involvement from the public or the regulated industry and is based simply upon a single exceedance at a monitor. The *"Determination of Enhanced Mitigation Measures after Photochemical Grid Modeling Completion"* section determines potential enhanced mitigation measure implementation based on reaching 85% of the design value. However, it does not state any process in determining to which facilities such measures would apply.

[3] 40 CFR 60, *et seq.*

AIR QUALITY RELATED VALUES (AQRV) ANALYSIS

Page 4-23 - The DEIS discusses the fact that AQRV analysis will be fully conducted using the PGM modeling results.

COMMENT: We object that BLM does not intend to afford industry an opportunity for involvement in this analysis and are concerned that potential mitigation measures will be implemented based upon the outcome of a flawed or inappropriate analysis.

RIGHTS OF WAY

Page 2-21, Rights-of-Way, Table 2-1 indicates that BLM intends to increase ROW exclusions areas from 44,014 acres under Alternative A to 48,258 acres under Alternative D. ROW Avoidance Areas will be increased from 24,203 acres under Alternative A to 349,358 acres under Alternative D.

Page 4-247, 4.2.7.1.1 Impacts from Lands and Realty Common to All Alternatives, *"Habitat loss, degradation, fragmentation, and species displacement from linear features (e.g., power-lines, roads, and pipelines) and other permitted facilities (e.g., communication sites) would occur..."*

COMMENT: The DEIS fails to provide sufficient discussion, documentation or justification for the proposed prohibitions of ROW on immense portions of the planning area. This information is a key requirement of NEPA and its omission constitutes a significant flaw in the analysis because it fails to consider the impacts such a decision would have on future oil and gas development, transportation, along with other activities which require ROW. Moreover, the statement that habitat loss can result from pipelines obviously fails to take into account that pipeline construction is a temporary impact and that all surface disturbance is fully reclaimed to BLM standards.

SOILS

Page 2-54, Table 2-6.1 – Alternative A states, *"Mitigate impacts on slopes >30% for oil and gas leasing and development (CSU);"* Alternative D states, *"Mitigate impacts on slopes >25% for oil and gas leasing and development (CSU)."*

COMMENT: The DEIS fails to provide documentation of any justification for the proposed increase in restrictions on slopes. For example, has it been documented that current activities have resulted in adverse impacts which would justify this change? If BLM has no evidence demonstrating that current measures are not successful, the proposed change is unwarranted and must be eliminated.

Page 4-279, 4.2.7.6.1 Alternative D - *"Under Alternative D, oil and gas activities would be allowed with a CSU stipulation on slopes less than 30 percent. CSU stipulations impose fewer protections to wildlife compared to NSO stipulations, therefore providing fewer protections to wildlife resources. Impacts to wildlife resources by the use of rangeland health standards and BMPs to manage authorized surface disturbing activities including those on fragile and unstable soils would be the same as Alternative C."*

COMMENT: What is BLM's rationale for the above statement that CSU stipulations would result in fewer protections to wildlife, given the fact that rangeland health standards and BMPs will be used on a site-specific basis to manage authorized surface disturbing activities?

Page 4-57 - The RFD projects 3-4 federal wells per year. Short-term surface disturbance would affect 17.2 acres/year and long-term surface disturbance would impact 74.2 acres/year during 2010 to 2014. These impacts would increase to 21.6 acres/ year short term and 10.8 acres/year long term. The total projected acres of disturbance over 20 years would be: 2,158 acres of surface disturbance with 1,106.5 acres reclaimed from 80 wells over 20 years.

COMMENT: Why is the projected short-term disturbance less than long- term disturbance? This is confusing because construction activities require more short-term surface disturbance than most long-term production activities. Please clarify.

Given the fact that BLM expects only 3 or 4 federal wells per year and the associated long-term disturbance is so low, what is BLM's justification for blanketing the majority of the planning area with no surface occupancy stipulations coupled with other restrictive stipulations and mitigation requirements?

WATER

Page 4-89, 4.2.5.4.2, Impacts from Water – *"Fluid mineral development generally impacts water resources by increasing NPS, including increased erosion and sedimentation from surface disturbance and unnatural drainage patterns associated with roads."*

COMMENT: This statement is provocative and ignores that existing stipulations and practices already require full protection of water resources. In fact, the DEIS describes BMPs to be utilized to avoid these very impacts in Appendix B, which specifically outlines *Erosion and Sediment Control Practices*, along with a host of other measures, designed to protect all aspects of water quality. Therefore, this statement is inappropriate because it fails to acknowledge the routine use of stipulations and other site-specific mitigation measures along with site-specific BMPs. We recommend this inflammatory statement be removed from the discussion of impacts.

CULTURAL RESOURCES

Cultural resource sites vary widely in quality of preservation, size, density relative to a geographic area, contemporary cultural importance, and scientific value. While recognizing that prehistoric and historic sites are a finite resource, their management must also be afforded a level of flexibility and discretion as dictated by site analysis. Therefore, the mitigation measures employed to protect discrete sites must vary according to their scientific or contemporary cultural significance. Some prior general knowledge as to how these mitigation measures might be employed is vital to planning purposes for other land uses.

Page 4-339, Discretionary Mitigation Measures – The DEIS indicates that impacts will be mitigated according to the process outlined in Sec. 106 of the National Historic Preservation Act and other

relevant State and federal statutes. In the event of inadvertent discoveries, the document directs that the surface disturbing activities will be forced to cease until data recovery efforts from the site are completed.

COMMENT: We support BLM's apparent intent to allow for flexible management of cultural resource impacts through consultation and site specific mitigation. Flexibility according to unique circumstances is key to protecting cultural resources while still allowing access to natural resources. In the event that data recovery is needed for inadvertent discoveries, we urge BLM to act expeditiously to complete its review process in order to avoid unnecessary delays in the ability of lease holders to develop the resource within their lease acreage.

Allocation to Use Categories and Surface Use Stipulations – The DEIS indicates that inventoried sites will be allocated to one or more of a variety of use categories according to established BLM protocols. Those sites allocated to the Conservation for Future Use, Public Use, Scientific Use, and Traditional Use (including designated Traditional Cultural Properties, or TCPs) will carry a stipulation of No Surface Occupancy (NSO). A buffer of ½ mile is indicated for TCPs.

COMMENT: Regulatory consistency is imperative for operational planning purposes; and while the document identifies a specific buffer for TCPs, the other NSO stipulations are much too vague to accurately assess. Experience shows that typical surface use restriction language delineates a specific buffer zone around sites according to use allocation, which we may or may not assess to be appropriate, but until such information is made available it is difficult to appropriately analyze. We recommend this information be included in a revised DEIS.

PALEONTOLOGICAL RESOURCES

Similar to cultural, paleontological resources also widely vary in both density and scientific value. While many fossil remains are widespread and well-studied, others may be rare and poorly understood. Numerous resources undoubtedly remain undiscovered and may be of high scientific value. Management of this resource concurrently with others requires the ability to assess the fossil resources which may be discovered and to make common sense discretionary management decisions accordingly.

Surface Use Stipulations for Designated Paleontological **Sites** – *The DEIS indicates that an NSO stipulation will be enforced for Designated or Recorded Paleontological Sites.*

COMMENT: The DEIS fails to specify what constitutes a "*Recorded Paleontological Site*" that would require an NSO stipulation. For instance, would this stipulation apply to known sites that do not contain vertebrate fossils, or non-vertebrate/plant remains that are common and of lower scientific interest? More specificity is needed to accurately assess this NSO requirement.

Potential Fossil Yield Categories and Associated Inventories – The DEIS indicates that areas classified under the Potential Fossil Yield (PFY) Categories 3 or higher (Moderate to Very High) would require a paleontological inventory, assessment, and possible mitigation requirements prior to surface disturbing activities.

COMMENT: PFY Category 3 is defined as either "*moderate*" potential or "*unknown*" potential (Classes 3a or 3b). We urge BLM to specify that this requirement applies only to Class 3a, or "moderate" potential in the revised DEIS. If this is not fully defined, it is entirely likely that any area with a PFY Classification of "*unknown*" could require an unwarranted costly and time consuming paleontological inventory prior to operations. If it is found that a paleontological inventory is in fact needed, BLM needs to assure in the DEIS that it will complete the process expeditiously to avoid unnecessary project delays.

VISUAL RESOURCES

Pages 2-91/92, Table 2-6.1, Visual Resource Management (VRM) Classification – The DEIS allocates acreages to VRM classifications I (landscape to retain its natural character) to IV (allows significant modification to the visual characteristics of the landscape). A Conditional Surface Use (CSU) stipulation would be applied to VRM classes II-IV that would require locating, painting, or otherwise camouflaging any structures or surface disturbance to blend in with the environment.

COMMENT: Why has BLM proposed the use of the same stipulation to VRM Classes III or IV (which allow for moderate or considerable modification of the landscape) as for Class II resources (which are intended retain the natural character of the landscape through low modification thresholds)? If the same stipulation is to be applied, what is BLM's rationale for the two separate VRM allocations? BLM needs to rewrite its surface use stipulations to reflect the difference among the various VRM classes in a revised DEIS to ensure appropriate mitigation will be utilized.

FISH, WILDLIFE, AND SPECIAL STATUS SPECIES

In many instances, the species habitat delineations in the DEIS are inconsistent with those identified by the Montana Department of Fish, Wildlife & Parks (FWP). We ask BLM to explain these discrepancies in a revised planning document, particularly due to the fact that the State manages most of the species for which habitat is identified. Such discrepancies are highly problematic for operators who work on both State and private lands that may be adjacent to public lands because two separate processes could be required for the same project if it crosses jurisdictional boundaries. We strongly recommend that BLM work closely with State agencies to eliminate the discrepancies in wildlife data and spatial representations utilized by BLM in the draft planning documents.

NSO Stipulations, Timing Limitations, and other Restrictions in Alternative B

COMMENT: The restrictions for surface-disturbing activities, NSO stipulations, and timing limitations on future oil and gas leasing with respect to several wildlife and plant species under Alternative B are unreasonable and unjustified. Incorporating any of the restrictions in Alternative B into the preferred alternative would unnecessarily preclude, prevent, and delay oil and gas development and other responsible multiple users from economic activities on millions of acres throughout the planning area.

Species and Habitat Maps

COMMENT: While the NSO, CSU, and TLS for fish and wildlife species may have been aggregated in maps regarding oil and gas "leasing standard stipulations" and "major moderate constraints," BLM failed to separately map the habitat areas with associated management restrictions for all species' habitat for which lease stipulations be imposed. In other BLM RMPs, it is routine to map habitat areas that may or may not include restrictions and management prescriptions separately from maps that illustrate the overall restrictions on future fluid mineral leasing. We recommend that BLM provide individual maps depicting each of the various habitats, along with associated land-use restrictions and special management areas, for all species that are discussed in the DEIS.

Mitigation Trust Account

Appendix C, page C-37, *"The creation of a "Mitigation Trust Account" when impacts cannot be avoided, minimized, or effectively mitigated through other means. If approved by the BLM, the proponent may contribute funding to maintain habitat function based on the estimated cost of habitat treatments or other mitigation needed to maintain the functions of impacted habitats."*

COMMENT: We have mixed reactions to the creation of a "Mitigation Trust Account" as discussed under the proposed wildlife CSU stipulations. BLM needs to provide additional details about the scope, proposed use, per dollar mitigation ratio that would be sought, potential limitations, and general utility of such a fund. Further, it is necessary for BLM to clearly define the regulatory assurances that will be provided to a project proponent that contributes to the mitigation trust account in circumstances when impacts cannot be avoided, minimized, or effectively mitigated through other means. Without a clear definition of these assurances, as well as the per dollar mitigation ratio, operators may not consider contributing to the trust account even when impacts cannot be otherwise avoided, minimized, or effectively mitigated.

Black-Tailed & White-Tailed Prairie Dogs

Page 2-32, Alternative D – *"NSO – Oil and gas leasing, development and exploration, and geothermal operations would be prohibited within 0.25 mile of black-tailed or white-tailed prairie dog colonies, active within the past 10 years."*

COMMENT: BLM has failed to justify or provide any scientific documentation supporting the management restrictions for the black-tailed and white-tailed prairie dogs in the DEIS, particularly the NSO stipulation within ¼ mile of habitat. These stipulations do not correspond with the U.S. Fish and Wildlife Service's (FWS) recent listing determinations for the species and its conclusions about the impact of oil and gas development on their habitat.

In 2009, the FWS determined that the listing of the black-tailed prairie dog under the Endangered Species Act (ESA) was not warranted and that *"increasing trends in the species'* occupied habitat since the early 1960s indicates that the presence or threatened reduction of habitat due to energy development is not a limiting factor for the species in Wyoming or elsewhere throughout its range" 74 FR 63353. In addition, FWS found that the *"prairie dog occupancy has apparently increased*

within oil and gas development areas in Wyoming (Sorensen et al. 2009, pp. 5– 6)" 76 FR 27782. Accordingly, the proposed NSO stipulation for oil and gas leasing within ¼ mile of black-tailed prairie dog is completely unjustified because it fails to correspond to the FWS' findings and must be eliminated.

In 2010, the FWS also determined that the listing of the white-tailed prairie dog under the ESA was not warranted and that *"due to its widespread distribution and extent of development, oil and gas activities will have the greatest potential to impact the white-tailed prairie dog. However, large populations persist in many of these areas."* Accordingly, the proposed NSO stipulation for oil and gas leasing within occupied prairie dog towns is unjustified because it fails to correspond to the FWS' findings. We strongly recommend that BLM eliminate the NSO stipulation for both the black-tailed and white-tailed prairie dogs in a revised DEIS. At a maximum, BLM should consider a CSU stipulation for oil and gas development in these areas.

BLM has failed to establish why a colony is considered to be *"active"* if it has been used in the past ten years. Without a clear explanation for the ten year *"active"* definition, this restriction is unreasonable and arbitrary. For example, if a colony was used nine and half years prior to a proposed surface disturbance and has not been used since, it is reasonable to assume that the nest either has been abandoned or no longer contains the resource values to attract prairie dogs. Yet it will still be considered "active" by BLM and would trigger the stipulations and restrictions identified in Chapter 2, even though the area may never have an *"active"* colony again.

BLM has not identified which colonies within the planning area have been active within the past ten years. In order to demonstrate that habitat can be maintained so that prairie dogs are not precluded from using colonies, operators must have a clear understanding of the location of active colonies and adequate justification that they have been in fact active sometime in the recent past. BLM needs to provide maps which identify active and inactive colonies in the revised DEIS.

In addition, the language in Chapter 2 regarding the definition of *"active"* prairie dog colonies is inconsistent with Appendix C, which states that *"Prairie dog habitat is defined as the maximum extent of areas occupied by prairie dogs at any time during the last 20 years"* (DEIS at C-170). This inconsistency must be corrected in the revised DEIS.

BLM needs to clearly explain and justify the methodology it used to define a colony as *"active"* in order to use the ten-year timeline in surface use restrictions for future oil and gas leases. If BLM ultimately decides that the standard by which a colony will be considered active is use within the last ten years or some other period of time, the agency must explicitly explain that colony sites which have been inactive within the past ten years or some other period of time will not be subject to the surface disturbing and disruptive activities and lease stipulations identified in Chapter 2. BLM must also clearly identify and map both active and inactive prairie dog colonies in the revised DEIS.

We also remind BLM that NSO stipulations for prairie dogs would be applicable only to future leases and cannot be imposed on existing leases simply because a plan revision has been prepared. Further, restrictions on surface-disturbing and disruptive activities inconsistent with the original terms of the lease cannot be enforced.

Appendix C, Alternative B, Page C-65 and C-95, *"Exception: An exception may be granted by the AO for activities that are not detrimental to the prairie dog, associated species, or their habitats. A survey for black-footed ferrets may be required if suitable habitat exists for this species."*

COMMENT: BLM has failed to define activities that may be considered *"not detrimental"* to the prairie dog, associated species, or their habitats in its description of exception criteria for NSO and CSU stipulations. Without this explanation, BLM may unreasonably deny exceptions for activities that may not be detrimental, including certain oil and gas activities. BLM must recognize that oil and gas development and the construction of associated infrastructure may be considered to be *"not detrimental"* to the prairie dog, associated, species, or their habitats due to the employment of best management practices, including efforts to limit surface disturbance, as well FWS' conclusions about the impacts of development and persistence of prairie dog towns (see above).

Black-footed Ferret

Page 2-74, Alternative D - *"Surface occupancy and use for oil and gas leasing, development, and exploration and geothermal operations would be prohibited within ¼ mile of black-footed ferret habitat (NSO)."*

COMMENT: We have been unable to determine in the DEIS whether the recommended ¼ mile NSO buffer around black-footed ferret habitat has been suggested by the FWS or developed by BLM. Therefore, it is impossible to determine if BLM has properly consulted with FWS in the development and subsequent utilization of this stipulation. In addition, BLM has failed to provide maps detailing black-footed ferret habitat.

BLM needs to disclose in a revised DEIS the scientific justification for the proposed NSO stipulation, either through a reference to a recommendation by FWS or by some other justification. We also encourage BLM to regularly work and consult with FWS to determine if portions of the stipulated area are no longer critical to the black-footed ferret and may be modified. BLM must also clearly identify and map black-footed ferret habitat in a revised DEIS.

Page 2-43, All alternatives – *"Prior to surface disturbance, potential black-footed ferret habitat (prairie dog colonies and complexes 80 acres or more in size and not designated as black-footed ferret reintroduction sites) would be examined to determine the absence or presence of black-footed ferrets (CSU). The findings of this examination could result in some restrictions to the operator's plans or could even preclude use and occupancy that would be in violation of the Endangered Species Act of 1973."*

COMMENT: BLM has failed to provide detail regarding the types of restrictions that could be placed on operator's plans based on the examination described above. In order for affected public lands users in the planning area to fully understand the impact of this management prescription; a revised DEIS must contain an adequate description of the type of restrictions that could result due to the findings of this examination.

Mountain Plover

Page 2-43, Alternative D – *"NSO – mountain plover habitat within ¼ mile"*.

COMMENT: BLM has provided no justification for the management restrictions for the mountain plover in the DEIS, particularly the NSO stipulation within ¼ mile of plover habitat. These stipulations do not correspond with the FWS' recent listing determinations for the species and its conclusions about the impact of oil and gas development on their habitat.

In May 2011, the FWS determined that listing the mountain plover under the ESA was not warranted, estimating that *"the current mountain plover breeding population to be over 20,000 birds, more than double the estimate cited in [its] 2002 proposal."* In addition, the Service concluded that *"despite the prevalence of energy development activities throughout the range of the mountain plover, there is little evidence as to whether, or to what extent, the overall effects of energy development are detrimental to mountain plover (Andres and Stone 2009, p. 25). Although oil and gas field development modifies and fragments nesting, brood rearing, and foraging habitats, mountain plover continue to use these areas"* (Smith and Keinath 2004, p. 36; Carr, in review) 76 FR 27782. Applying NSO stipulations to mountain plover habitat in the planning area does not correspond with the FWS' listing determination for the species and is not justified through any peer-reviewed science since that decision was made. As such, imposition of an NSO stipulation for oil and gas leasing in areas with mountain plover habitat is completely arbitrary; and we recommend that the BLM eliminate this stipulation from the revised DEIS.

Moreover, we are unable to locate in the DEIS any scientific justification that an additional ¼ buffer around mountain plover habitat, on top of already designating habitat areas as NSO, is necessary to protect the species during nesting season. In addition, the proposed areas where NSO stipulations will apply in the planning area are wildly inconsistent throughout the EIS. Language in Chapter 2, which requires an NSO stipulation for areas within ¼ mile of mountain plover habitat, is inconsistent with language in Chapter 4 and Appendix H, which state that *"Surface use is prohibited within 1/4 mile of active mountain plover nest sites"* (DEIS at 4-441 and H-25). Further, Appendix C makes no mention of the ¼ mile area within habitat, stating only *"Surface occupancy and use is prohibited within mountain plover habitat"* (DEIS at C-165). These broad inconsistencies must be corrected in a revised DEIS.

Additionally, any stipulation applied for mountain plover would appropriately be applied only to active nests, rather than all habitat areas. Applying a stipulation to oil and gas leasing should come with a reasonable assumption that the area is actually occupied by the species.

Page 3-84, *"The mountain plover is associated with shortgrass prairie/grasslands (especially those that are heavily grazed and are on level or gently sloping areas), and they regularly occupy prairie dog towns."*

COMMENT: It appears that BLM attempts to justify many of the management restrictions for mountain plover in the DEIS, including NSO stipulations for future oil and gas leases, due to its close association and shared habitat with the white-tailed and black-tailed prairie dog.

However, as discussed previously in these comments, FWS determined in 2009 that the listing of the black-tailed prairie dog under the ESA was not warranted. Accordingly, the proposed NSO stipulation for oil and gas leasing within occupied prairie dog towns is unjustified and fails to correspond with the FWS' findings and must be removed.

Page 2-43, Alternative D – *"TL – April 1 through July 31 within 1/4 mile of habitat."*

COMMENT: We are unable to locate in the DEIS any scientific justification that an additional ¼ buffer around mountain plover habitat, on top of already designating habitat areas as NSO, is necessary to protect the species during nesting season. Given that FWS determined list of the plover was not warranted and absent scientific documentation regarding the need for this stipulation, it must be removed from a revised DEIS.

Page 2-43, Alternative D – *"Note: NSO would apply to permanent or long-term action. TL would apply to temporary or short-term disturbances."*

COMMENT: We recommend that BLM explicitly state in a revised DEIS that oil and gas drilling and production facilities are temporary or short-term disturbances that would receive TL stipulations rather than NSO.

Peregrine Falcons

Page 2-43, Alternative D - *"NSO – ½ mile of peregrine falcon nesting sites."*

COMMENT: This buffer significantly exceeds the FWS's recommendation for oil and gas activities around nests, which calls for a 200 meter (660 feet) buffer. Accordingly, the ½ mile buffer is arbitrary and has not been justified in the DEIS. FWS' NSO recommendations for special status eagles and raptors are more than adequate and should be relied upon by BLM for peregrine falcons. Accordingly, the buffers in the revised DEIS need to be modified to comport with the FWS' recommendation of 200 meters (660 feet) around nests.

Bald Eagles

Page 2-43, Alternative D – *"NSO – within ½ mile of active and alternate eagle nests (for territories occupied within the last five years) unless the activity complies with Montana bald eagle management guidelines."*

COMMENT: The DEIS contains no scientific documentation to justify designating NSO within ½ mile of the active nests of bald eagles. The species was recently removed from the threatened and endangered list, yet these buffers significantly exceed the FWS's recommended guideline for oil and

gas activities around nests, which calls for 200 meter (660 feet) buffer. Accordingly, BLM's ½ mile buffer is unreasonable. We recommend BLM's management be consistent with FWS guidelines.

What is the scientific documentation which justifies a nest is to be considered "active" if it has been used in the past five years? Without a clear explanation for the five season "active" definition, this restriction is unreasonable and arbitrary. For example, if a nest was used in the past four years prior to a proposed surface disturbance and has not been used since, it is reasonable to assume that the nest either has been abandoned or no longer contains the resource values to attract bald eagles. Yet it will still be considered "active" by BLM and would trigger the stipulations and restrictions identified in Chapter 2, even though the nest may never be "active" again.

In addition, BLM has failed to identify which nests within the planning area have been active within the past five years. In order to demonstrate that habitat can be maintained so that bald eagles are not precluded from using nest sites, operators must have a well-defined understanding of the location of active nests and adequate justification that they have been in fact active sometime in the recent past. Further, BLM needs to provide maps detailing active or inactive nests for bald eagles in revising planning documents.

We also remind BLM that any NSO stipulations for bald eagles that may be applicable for future leases may not be imposed on valid existing leases simply because a plan revision has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms will violate valid existing lease rights.

Ferruginous Hawks

Page 2-43, Alternative D – *"NSO – within ½ mile of ferruginous hawk nest sites which have been active within the past 2 years."*

COMMENT: The DEIS fails to scientifically document the need for this buffer to significantly exceed the FWS's recommended 200 meter (660 feet) buffer around active hawk nests. Accordingly, the buffers in the revised DEIS need to be modified to comport with FWS guidelines.

We also remind BLM that any NSO stipulations ferruginous hawks that may be applicable for future leases may not be imposed on valid existing leases simply because a plan revision has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms may violate valid existing lease rights.

Raptors

Page 2-47, Alternative D – *"TL – March 1 to August 1 within ½ mile of raptor nest sites which have been active the past 7 years; NSO - within ½ mile of raptor nest sites which have been active in the past 7 years."*

COMMENT: Once again, this buffer significantly exceeds the FWS' recommendation for oil and gas activities around nests, which calls for 200 meter (660 feet) buffers. Accordingly, we urge the BLM to adopt the guidance provided by the FWS.

We also remind BLM that any NSO stipulations for raptors that may be applicable for future leases may not be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms may violate valid existing lease rights.

BLM must clearly explain and justify the methodology used to define a nest as "active" in order to use the seven-year timeline in surface use restrictions for future oil and gas leases. If BLM ultimately decides that the standard by which a nest will be considered "active" is used within the last seven years or some other period of time, the agency must explicitly state that nest sites that have been inactive within the past seven years or some other period of time will not be subject to the surface disturbing and disruptive activities and lease stipulations identified in Chapter 2. BLM must also clearly identify and map all active and inactive raptor nests in the revised DEIS.

In addition, the DEIS fails to identify on a map which nests within the planning area have been active within the past seven years. In order to demonstrate that habitat can be maintained so that falcons or special status raptors are not precluded from using nest sites, operators must have a clear understanding of the location of active nests and adequate justification that they have been in fact active sometime in the recent past. Therefore, BLM needs to provide a map of active or inactive nests for prairie falcons and special status raptors.

<u>Big Game</u>

Chapter 3, 3.7.3.1 Big Game

COMMENT: The proposed restrictions on oil and gas development do not correspond to the current status of big game populations in the planning area. In Chapter 3, BLM explains the relative stability of most species in the planning area, despite a wide-ranging array of threats (DEIS at 3-66 and 3-67). Nevertheless, BLM proposes to apply many unwarranted restrictions on future oil and gas development in big game habitat, including parturition areas and winter range. Most notably, the Preferred Alternative seasonally prohibits surface occupancy on 258,592 acres of big game winter range and would apply CSU stipulations on another 266,819 acres. Given the stability of big game populations, what is BLM's scientific justification for these stipulations? We strongly recommend that BLM reconsider its proposal to impose the proposed stipulations for big game and develop more practical stipulations that correspond with current population figures, along with valid existing lease rights, and balance responsible multiple use-development with protection and conservation of species' and their the habitat.

BLM must also recognize that it cannot impose new timing restrictions on existing leases simply because a plan revision has been prepared. Restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms may violate valid existing lease rights.

Page C-183, Appendix C, Alternative D – *"Surface use is prohibited from December 1 through May 15 within CAPS SCORE 2 areas of big game winter range habitat."*

Page C-135, Appendix C, Alternative D – *"In CAPS SCORE 1 –Big Game Winter Range, the operator may be required to conduct inventories for the presence of big game in the project area prior to conducting any operations."*

COMMENT: While Chapter 4 includes a brief explanation of the differences between CAPS SCORE 1 (moderate value) and CAPS score 2 (high value) winter range, the stipulations in Appendix C or Chapter 2 fail to correspond to Map 15, which only indicates those areas that have 'high' and 'moderate' values for big game winter range. We recommend that BLM make consistent the stipulations in Appendix C and Map 15 in a revised DEIS by indicating that the high value habitat represents CAPS SCORE 2 and moderate value habitat represents CAPS SCORE 1 in Map 15.

In addition, while Appendix C indicates the stipulations that will apply to CAPS SCORE 1 and CAPS SCORE 2 areas, Chapter 2 does not. This must be corrected in a revised DEIS.

Page 2-46, Alternative D – *"TL – December 1 to March 31 within big game winter range."*

COMMENT: The period for which timing limitations will apply is inconsistent in Chapter 2 and Appendix C. While Chapter 2 states that TL stipulations will apply from December 1 to March 31, Appendix C states that TL stipulations will apply from December 1 to May 15. Again, the stipulations are inconsistent among the chapters and the appendices in the DEIS and must be corrected in a revised DEIS.

Page 2-45, Alternative D – *"TL – April 1 to July 1 within established big game parturition habitat; CSU – within big game parturition habitat."*

COMMENT: BLM failed to provide maps of big game parturition habitat in the DEIS. As such, we are unable to determine the actual impact timing limitations in these areas will have on future oil and gas development in the planning area. BLM must provide individual maps of these areas in a revised DEIS.

Page 2-72, Alternative D – *"There would be no net increase in permanent roads built in areas where open road densities are 1 mi/mi2 or less in big game winter range habitat (Maps 15-20) and parturition ranges, unless not possible due to conflicts with valid existing rights. All practicable measures would be taken to assure that important habitats with low road densities remain in that condition."*

COMMENT: We object to this stipulation because it represents another layer of constraints in addition to an already highly restrictive set of management principles for big game as proposed. This stipulation could prevent, preclude, or deny new oil and gas development across in several areas within the planning area. While most roads constructed for oil and gas development are temporary (they are ultimately reclaimed), semi-permanent roads may be necessary to provide

access to certain infrastructure. In order to build a road or roads that result in a no net increase in permanent roads, an existing road or roads would have to be reclaimed by the project proponent. In some cases, the project proponent may not be in a position to reclaim someone else's existing road or may not have any roads to reclaim at all. Therefore, this restriction presents a number of problems that may compromise the project proponent's ability to responsibly develop and produce energy supplies

Accordingly, we recommend that BLM reconsider the 'no net gain' in permanent roads and develop a management principle that minimizes permanent road construction but does not preclude oil and gas development in areas with higher road densities. In addition, BLM has not provided exemption, modification, or waiver criteria for this stipulation in the DEIS. We strongly recommend that BLM at include those criteria in the revised DEIS.

Big Horn Sheep

Page 2-46, Alternative D – *"Surface occupancy and use for oil and gas exploration (including geophysical exploration) and development would be prohibited within designated bighorn sheep lambing and winter range areas (NSO)."*

COMMENT: We are puzzled why BLM has opted to designate bighorn sheep lambing areas as NSO in the preferred alternative, rather than applying seasonal timing limitations. BLM has provided no scientific evidence that a year-round NSO stipulation is necessary, nor has it indicated that these areas require further protection than the seasonal prohibition of use. Accordingly, we recommend that the preferred alternative for lambing areas reflect a TL rather than NSO stipulation in the revised DEIS.

BLM's proposal to prohibit geophysical exploration in big horn sheep habitat is unfounded and inconsistent with BLM Manual 3150 (L)(.11), Onshore Oil and Gas Geophysical Exploration Surface Management Requirements, which classifies geophysical activities as a "casual use". Casual use is defined in the Manual as *"Activities that do not cause any appreciable disturbance or damage to the public land or resources or existing improvements on that land are considered casual use."* In fact, the Manual clearly recommends that exploration in closed areas as well as in areas subject to no surface occupancy stipulations be allowed because *"geophysical data collected from areas closed for oil and gas development may provide additional insights into the interpretation of data collected in other areas that are open to development."* We recommend that BLM revise its management approach for geophysical activities in all sections of the DEIS to comport with established Bureau policy.

Fisheries

Page 2-47, Alternative D – *"NSO – within ¼ mile of designated reservoirs with fisheries."*
Page 2-47, Alternative D – *"NSO – within ½ mile of Class I (Blue Ribbon) streams."*

COMMENT: What is BLM's justification for the requirement of an NSO stipulation for future oil and gas leases within ¼ miles of reservoirs with fisheries and ½ mile within Class I streams? Moreover,

BLM has failed to adequately demonstrate how or why oil and gas development within these distances would negatively impact water quality or fisheries in Chapters 3 or 4. Historic BLM buffers for oil and gas development around stream and river channels and banks have been limited to 300 to 500 feet and have proven to be a reliable mitigation measure to protect fish and water resources. Furthermore, BLM would allow oil and gas leasing with a CSU stipulation within 300 feet of riparian and wetland areas in this DEIS (p. 2-47). It is irrational to assume that a 300 foot CSU buffer as applied to riparian and wetland areas would not provide the same level of protection to reservoirs and streams. Additionally, BLM has not mapped these reservoirs and apparently does not know the actual acreage that will be impacted by the ¼ mile buffer around reservoirs (DEIS at 4-441).

We strongly believe a 300 foot CSU buffer is adequate for reservoirs and Class I streams. We, therefore, ask why BLM doesn't allow oil and gas leases to be offered with a CSU stipulation in and within 300 feet of designated reservoirs and streams, instead of an NSO stipulation within ¼ miles and ½ miles?

Sprague's Pipit

Page C-188, Appendix C, Alternative D – *"Surface use is prohibited from April 15 through July 15 in Sprague's Pipit Habitat."*

COMMENT: BLM does not indicate which of the habitats identified in Map 25 will be designated as TL in the DEIS. Map 25 indicates that Sprague's Pipit distribution is found in optimal, medium, low, and unsuitable habitat areas, but Appendix C and Chapter 2 only state that TL stipulations will apply simply to 'habitat.' BLM must clearly explain which of these habitat areas will be subject to TL stipulations in the revised DEIS.

Special Status Plants

Page C-143, Appendix C, Alternative B – *"A field inspection will be conducted for special status plant species by the lessee prior to any surface disturbance."*

COMMENT: We object that no exceptions, waivers, or modifications have been considered for required field inspections for special status plants. If the project proponent or BLM already has knowledge that a lease no longer contains special status plant species or lacks the resource values that are typical of their habitat, an additional field inspection would be unnecessary. BLM needs to retain the flexibility to grant exceptions waivers, and modifications to this stipulation and exempt the operator from conducting a superfluous field inspection.

We also remind BLM that any CSU stipulations that may be applicable for future leases may not be imposed on valid existing leases simply because a plan revision has been prepared. Legally, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease stipulations may violate valid existing rights.

GREATER SAGE-GROUSE

The NTT Report is not supported by the Western Association of Fish and Wildlife Agencies (WAFWA) as BLM's sole source of Sage-grouse management direction. In a letter sent to the Interior Secretary on May 16, 2013 WAFWA member states made it clear that they never endorsed the sole use of the NTT or any other scientific publication to determine appropriate management of Sage-grouse habitat. Rather, they believe that a variety of peer-reviewed publications which collectively provide the best available science for sage-grouse should have been used by BLM as the basis for conserving the Sage-grouse, thereby avoiding a listing under the Endangered Species Act (ESA). WAFWA went on to recommend that management and regulatory mechanisms be based upon the best available science which would provide the best strategy for near- and long-term management of sage-grouse and provides the best opportunity for precluding the need to list the species under the ESA.

Additionally, the Northwest Mining Association (NWMA) recently published a report *"BLM's NTT Report: Best Available Science or a Tool to Support a Pre-Determined Outcome?"* alleging that BLM failed to use best available science, ignored existing regulatory tools and adopted a pre-decisional Greater Sage-Grouse Conservation Policy. We share this view. The NWMA report questions the appropriateness of the NTT Report, because the FWS' *"warranted-but precluded"* determination was based upon the conservation measures already contained in BLM Manual 6840 - Special Status Species Management. Moreover, FWS concluded that BLM needed to properly and consistently implement Manual 6840 in its Resource Management Plans and provide sufficient monitoring data to demonstrate the effectiveness of the resulting conservation measures.

Another major fundamental concern the signatories to this letter wish to raise is the inherent flaw in BLM's basic assumptions, due in part to the flawed recommendations contained in the NTT report, which fail to recognize that the level of disturbance associated with a well is not a constant throughout its life. The highest level of surface disturbance associated with oil and gas development occurs primarily during the construction, drilling and completion phases, which can last a little as a day or two up to a few months, depending upon the time it takes to complete the well. Once a well goes into production, these activities subside dramatically and only regular monitoring and maintenance of the well are required. Shortly after well completion, the operator typically begins interim reclamation actions designed to partially restore any impacted habitat. This partial reclamation will remain in effect until the well has been depleted. Upon conclusion of production activity, the operator will then move forward with plugging and abandonment procedures, which also includes final reclamation that will ultimately result in full restoration of the site and its return to productive habitat.

Chapter 2 – Alternatives

Page 2-44/45 - Table 2-5 *Lease Terms and Stipulations*

COMMENT: Table 2-5 presents several different classifications of sage-grouse lease terms and stipulations. The information contained in Appendix C (Alternative D) is completely inconsistent with that presented in Table 2-5. For example,

- Table 2-5 discusses timing limitation stipulations for greater sage-grouse winter range within 2 miles of a lek from December 1 to March 1. However, Appendix C (Alternative D – Page C-184) states *"Surface use is prohibited within sage grouse winter range from December 1 through March 1. Sage grouse winter ranges not identified, due to lack of inventories, are delineated by a 3 mile buffer from lek sites."* Such inconsistencies make it impossible to provide reasoned comments on BLM's proposed action. Please clarify. The admission that BLM has been unable to rely upon an existing inventory which clearly identifies sage-grouse winter ranges relates to the very concern raised at the beginning of these comments. BLM does not currently possess the data required to make land management decisions.

- Table 2-5 discusses timing limitation stipulations for greater sage grouse nesting habitat within 3 miles of a lek from March 1 to June 15; and for *"now oil and gas leases"* in greater sage-grouse habitat. However, Appendix C (Appendix D – Page C-189) states *"Sage Grouse Nest Areas (Restoration Areas and General Habitat Areas) - surface use is prohibited from March 1 through June 30 within 3 miles of sage grouse leks. This stipulation does not apply to operation and maintenance of production facilities."* Is it June 15 or June 30? Does this also mean to apply only to "new oil and gas leases" as alluded to in Table 2-5?

Appendix H, *"includes numerous recommendations and best management practices (BMPs) or potential conditions of approval (COA's)"*

COMMENT: *Appendix H is referenced in Chapter 2 as a footnote to Table 2-5 for "new oil and gas leases,"* but the relationship between those measures and the stipulations set forth in Chapter 2 is vague. Please clarify how the applicability of such measures (as discussed in Appendix H) would be determined. For example, Page H-33 includes a possible protection measure prescribing sage-grouse nesting habitat avoidance on areas within 4.0 miles of a lek from April 1 – June 30. How would this measure be considered relative to the restrictions included in Table 2-5?

Page 2-68 (Table 2-6.1) - *"Conditions of Approval (COAs) would be applied to all Applications for Permit to Drill (APDs) for Special Status Species."*

COMMENT: How does this apply to the stipulations presented in Table 2-5 and to the information presented in Appendix AB and Appendix H? Please clarify in more detail and whether these COA's would extend to only new "oil and gas leases".

Chapter 3 – Affected Environment

Chapter 3 provides information on the current condition of resources, resource uses, and programs in the Billings Field Office decision area that could be affected by the revised RMP alternatives described in Chapter 2. This chapter is organized into Resources, Resource Uses, Special Area Designations, and Social and Economic. Each of these sections is further divided into resources or program areas. This is the organization prescribed in the BLM guidance (USDI-BLM 2005). Existing conditions described herein are used as the baseline against which impacts of the different alternatives are analyzed and compared in Chapter 4.

COMMENT: We strongly object to current management being used as the baseline for determining potential environmental consequences when compared to other alternatives. Alternative A is far from a baseline because it reflects already implemented prescriptive management decisions and restrictive lease stipulations. We question why BLM did not determine the effectiveness of the measures currently in place based upon the baseline data collected before current management was implemented. In so doing, BLM would get a picture of how current management is actually working. Clearly, BLM is utilizing this methodology to arbitrarily "raise the bar" in order to rationalize future management options that are in reality unjustifiable.

Throughout the Affected Environment discussion regarding sage-grouse, much of the information presented is based on studies of Sage Grouse Management Zone 1 (MZ1), which includes northeastern Wyoming and far western North and South Dakota. This broader scale may or may not be directly applicable to the Billings/Pompey's Pillar planning area. The discussion should be refined to the Billings/Pompey's Pillar planning area consistent with the direction provided on Page 3-1. Individual comments along this same vein are made below reflecting this concern as it applies to specific topics. Although analysis of MZ1 (or MZ2) would be appropriate as a study area for analysis of cumulative impacts to sage-grouse (see comments directed to Cumulative Effects below), potential direct and indirect impacts to sage-grouse and sage-grouse habitat resulting from the RMP should address conditions and potential direct and indirect impacts specific to the Billings/Pompey's Pillar planning area.

Page 3-85 (Table 3-29)

COMMENT: Table 3-29 lists the number of acres of total occupied sage-grouse habitat in the planning area, broken down by land ownership. The figures are derived from data compiled by the Montana Department of Fish, Wildlife & Parks habitat maps. Has BLM independently verified the accuracy of the mapping and evaluated the criteria used to identify and map occupied sage-grouse habitat?

Page 3-86, *"The Billings Field Office is bisected by two greater sage-grouse management zones; the Great Plains Management Zone (MZ1) and the Wyoming Basins Management Zone (MZ2). Most of the planning area lies within MZ1; however, the majority of the sage-grouse habitat lies within the extreme northern portion of MZ2 (See Figure 3-10). The following discussion of the landscape context of the planning area related to greater sage-grouse describes MZ1 since that is where the majority of the planning area is located and issues and descriptions of MZ1 are mostly the same as those that would be described for the northern portion of MZ2 found in the planning area."*

COMMENT: It is obscure how the management directives in the planning area relate to the designations of Management Zone 1 (MZ1) and Management Zone 2 (MZ2). If the issues and descriptions are mostly the same for MZ1 and MZ2, what is the purpose of separating MZ1 and MZ2 into different management zones? The text on pages 3-86 and 3-87 describes the ecology and flora of MZ1 but does not address the flora of MZ2, in which the majority of sage-grouse habitat in the planning area is located. Because the management zones are separated on the basis of floristic

provinces, it would be expected that the flora would differ between the two zones. How does the differing flora in MZ1 and MZ2 affect proposed management of sage-grouse in the planning area? The text on page 88 and 89 continue to expand on the ecological characteristics of MZ1 in relation to fire ecology and grazing effects on sage-brush habitat, noting how MZ1 differs from other management zones. Similarly, effects of energy development in MZ1 are addressed in detail, but the relationship of the effects of energy development in MZ1 to the planning area in general and MZ2 in particular are not addressed. Please correct this.

Page 3-87, *"Greater sage-grouse populations have declined in portions of the MZ1 through wholesale loss of habitat as well as through impacts to birds on the remaining habitat through disturbance and direct mortality."*

COMMENT: What is the source of this information and to which parts of the Billings/Pompey's Pillar planning area does this statement apply? What are the sources of direct mortality in the Billings/Pompey's Pillar planning area (or outside of the planning area) that have caused declines sage-grouse in populations? At the population level it is very difficult to ascribe population declines to direct mortality. Populations are cyclic and influenced by many factors including weather.

The report by Samson et al (2004) is simply a general discussion of birds associated with prairie grassland habitats in the Great Plains. Although the past and current effects of management in parts of MZ1 are addressed in this RMP/EIS, the influence of these factors on sage-grouse in the Billings/Pompey's Pillar planning area (specifically) is unclear. What is the status of sage-grouse populations in Billings/Pompey's Pillar planning area? The draft RMP/EIS seems to equate Sage-Grouse MZ1 with the planning area (even though it states sage grouse habitat within the planning areas lies in MZ2), but does not present a rationale for how the MZ2 planning area is similar or dissimilar to the MZ1 planning area. Much of the discussion hinges on information gathered on a broader scale, which may or may not have direct applicability to the Billings/Pompey's Pillar planning area (i.e., MZ1 includes populations and subpopulations of sage- grouse in both northeastern Wyoming or far western North and South Dakota). Please clarify the above, and provide a more robust discussion of the Billings/Pompey's Pillar planning area specifically.

Page 3-87, *"The most pervasive and extensive change to the sagebrush ecosystems in MZ1 is the conversion of nearly 60% of native habitats to agriculture (Samson et al. 2004)."*

COMMENT: The publication of Samson et al (2004) does not address sagebrush ecosystems in Sage-Grouse MZ1. This paper addresses prairie grasslands in the Great Plains, which represents a much larger area. Nor does Samson et al (2004) differentiate between prairie grasslands and sagebrush steppe.

It is necessary for BLM to clearly present information on (quantify) the amount of sagebrush habitat that has been converted to agricultural uses within the Billings/Pompey's Pillar planning area specifically. The DEIS seems to equate Sage-Grouse MZ1 with the Billings/Pompey's Pillar planning area, but does not present a rationale for how MZ1 is similar or dissimilar to the planning area. As discussed above, MZ1 includes populations and subpopulations of sage-grouse in both northeastern Wyoming or far western North and South Dakota.

Page 3-88, *"Individual species have different thresholds of fragmentation tolerance; greater sage-grouse have large spatial requirements and eventually disappear from landscapes that no longer contain large patches of habitat while smaller birds like Sprague's pipit can persist in landscapes with smaller patches of habitat because their spatial requirements are smaller."*

COMMENT: BLM fails to provide any citation for its information regarding patch size thresholds for sage-grouse. This concept has important management implications and patch size thresholds for sage-grouse must be identified in order to avoid habitat fragmentation impacts. We recommend this information be included in revised planning documents.

Page 3-89, *"Perhaps the most pervasive change associated with grazing management in sage-grouse habitats throughout the MZ is the construction of fencing and water developments (Knick, et al. 2011). Barbed wire fences contribute to direct mortality of sage-grouse through fence collisions (Stevens 2011) and water developments may contribute to increased occurrence of West Nile Virus in greater sage-grouse (Walker and Naugle 2011). Water developments are particularly prevalent in the north central portion of the MZ. Additional habitat modifications associated with grazing management include mechanical and chemical treatments to increase grass production, often by removing sagebrush (Knick, et al. 2011)."*

COMMENT: While the DEIS addresses grazing in MZ1, there is no specific discussion of grazing and the associated range condition within sage-grouse habitats in the Billings planning area. Water developments and associated West Nile virus are addressed for MZ1 but again, no mention is made of whether or how West Nile virus has affected sage-grouse in the Billings planning area, specifically. Absent information related directly to the BFO, this statement is unfounded. The revised planning documents must directly discuss how grazing and West Nile virus have impacted the planning area.

Page 3-89, *"Currently, nearly 16% of the MZ is within 3km of oil and gas wells, a distance where ecological effect is likely to occur (Knick et al 2011)."*

COMMENT: Energy development in MZ1 is addressed; however, energy development in MZ2 and in particular the Billings/Pompey's Pillar planning area is not addressed in similar detail. What percentage of Billings/Pompey's Pillar planning area (MZ2) is within 3km of oil and gas wells and how would that affect proposed sage-grouse management in this specific planning area? Absent information related directly to the BFO, this statement is unjustifiable. The revised planning document must discuss directly the proximity of oil and gas wells to sage-grouse habitat and leks.

Page 3-89, *"Much of the current oil and gas development is occurring on private lands with little or no mitigation efforts, which elevates ecological and conservation importance of sage-grouse habitat on public lands."*

COMMENT: What is the source of information that there are little or no mitigation efforts on private land? Does this statement apply to MZ1 or directly to the Billings/Pompey's Pillar planning area? How does current oil and gas development in the planning area compare with respect to

private versus public land? This statement fails to recognize the initiatives and advances in technology that been developed in response to elevated concerns over the conservation status of sage-grouse and must be modified in the revised planning documents.

Ramey et al (2011) identify the following advances in technology that avoid and reduce potential effects of oil and gas development on sage-grouse:

- Directional drilling to reduce surface disturbance by drilling multiple wells from one drilling pad;
- Steerable downhole motors and horizontal well bores that can drill as many as many as 20 boreholes from one pad and greatly increase the effective radius of production from one well pad;
- More efficient drill bits that reduce drilling times and rates of failure;
- Lightweight modular drilling rigs which deploy more easily and require a smaller foot print; and
- Slim-hole drilling, micro-holes and coiled tubing which reduce waste volumes, surface disturbance, and noise.

COMMENT: The listing of sage-grouse as a candidate species under the ESA and its "*warranted but precluded*" status has increased awareness of the conservation status and conservation efforts and has led to Wyoming, Montana, and other states to develop statewide conservation strategies to protect sage-grouse and their habitat. As such, the RMP/EIS should reference and discuss how such efforts would interface with proposed BLM restrictions. The following are some of the initiatives that have been developed in response to sage-grouse conservation concerns:

- The Wyoming Governor issued Executive Order 2011-5 that establishes guidelines for managing Greater Sage-Grouse Core Area Protection.
- The Montana Governor issued Executive Order No. 2-2013 establishing a Greater Sage-grouse Habitat Conservation Advisory Council which is mandated to gather information, furnish advice, and provide recommendations to the Governor on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the ESA.
- The FWS, in 2013, issued the Conservation Objectives Team Report, which provides state, federal, local, and private entities with permitting or land management authority information to support conservation actions for sage-grouse.
- The Sage-Grouse National Technical Team (2011) produced A Report on National Greater Sage-Grouse Conservation Measures, which addresses the latest science and best biological judgment to assist in making management decisions.
- WAFWA completed the Greater Sage-Grouse Comprehensive Conservation Strategy (2006), which identifies the critical need to develop associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of sage-grouse and the landscapes upon which they depend.
- A joint report (The History and Current Conditions of the Greater Sage-Grouse in Regions with Energy Development -2007) by U.S. Department of Energy, Interstate Oil and Gas Compact Commission and ALL Consulting provides a historical overview of the sage-grouse to help clarify its regional significance; identifies current conservation plans of important stakeholders; and discusses current and historical management approaches.

- The Natural Resource Conservation Service (NRCS) with the Western Governors Association published Conserving the Greater Sage-Grouse: Examples of Partnerships and Strategies of Work Across the West, which illustrates the depth of commitment and cooperation that is taking place across the West to conserve the sage-grouse.
- In 2010, the NRCS and numerous conservation partners (local, state and federal agencies, Tribes, non-governmental organizations) in the Western US established the Sage Grouse Initiative to work towards sustaining working ranches and conserve Greater sage-grouse populations in the West using existing voluntary conservation programs.

In addition, the DEIS should have referenced and directly considered information such as the joint report of the Department of Energy, Interstate Oil and Gas Compact Commission and All Consulting (2007), which states:

"The oil and gas industry is a vital component for the successful conservation of sage-grouse. To date, this particular industry has had active members with sage-grouse workgroups and is involved in surveying and monitoring efforts within sage-grouse habitats, such as the Cedar Creek Anticline or Powder River Basin. In certain areas, the oil and gas industry has been responsible for generating sage-grouse distribution density data, as well as other wildlife species, in localities that previously lacked data. The industry is beginning to take a more active role in the conservation and protection of the bird by funding study-based projects."

Page 3-90, *"The cumulative and interactive impact of multiple disturbances and habitat loss has influenced the current distribution of greater sage-grouse in MZ1. The cumulative extent of human caused changes, the human footprint, on sage-grouse habitat in MZ1 is highest at the northern edge of the MZ but occurs throughout the MZ (Leu and Hanser 2011) (Figure 3-16). Population centers for greater sage-grouse in MZ1 (Doherty et al 2011) generally correspond to areas lacking high human footprint and some of these areas have been designated as core areas by Montana Fish, Wildlife, and Parks (Montana Fish, Wildlife, and Parks 2010). Greater sage-grouse range in MZ1 is very similar to portions of range where sage-grouse have been extirpated i.e., areas with high human footprints, mostly because of abundance and distribution of sagebrush in the MZ (Wisdom et al 2011) suggesting that sage-grouse in MZ1 are more vulnerable to declines than other portions of sage-grouse range."*

COMMENT: As previously noted, the above discussion relates to MZ1 not MZ 2, where the majority of sage-grouse habitat in the Billings planning area is located. Does this statement apply to MZ2? What is the data for MZ2 that would support this assertion?

If Sage-Grouse MZ1 is "very" similar to overall portions of the range in which sage-grouse have been extirpated, mostly because of the abundance and distribution of sagebrush, please explain why were the seven sage-grouse management zones delineated based on floristic provinces? Presumably, they differed based on floristic characteristics of which sagebrush is a major component. Suggesting that sage-grouse are more vulnerable to declines in MZ1 because of the abundance and distribution of sagebrush does not appear to have a scientific basis.

Based on human effects to sagebrush habitat, it would appear that MZ1 would be the least likely to experience extirpation of sage-grouse. The following statement from Page 3-81 would support the contention that sage-grouse in MZ1 are the least likely to experience impacts from the "human foot print," *"Current estimates suggest that about 16 percent of the management zone is within 6.9 kilometers of urban development, although Sage-Grouse Management Zone 1 generally has lower rates of population increases compared to other management zones (Knick et al 2011)."* How does the vulnerability to extirpation in MZ2 relate to BLM's contention in the DEIS that sage-grouse in MZ1 are more vulnerable to extirpation?

The above-cited quotation is the same for the MCFO, HiLine, and Billings/Pompey's Pillar planning areas. It appears that the draft RMP/EISs relied on the same information in MZ1 to formulate management actions; however, none of these documents relates sage-grouse populations and habitat in MZ1 or MZ2 to population and habitat conditions in their respective planning areas. Is there an assumption that all of the planning areas have the same factors driving sage-grouse management and the same environmental conditions and constraints affecting the ecology of sage-grouse regardless of management zone and planning area?

Chapter 4 – Environmental Consequences

COMMENT: Under Executive Order No. 2-2013, Montana Governor Bullock mandated the establishment of a Greater Sage-grouse Habitat Conservation Advisory Council with a stated purpose "to gather information, furnish advice, and provide to the Governor recommendations on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the Endangered Species Act (ESA), by no later than January 31, 2014."

Will this advisory council supplant the Montana Sage Grouse Working Group (and/or local working groups) or will these groups continue to address sage-grouse management? In addition, please clarify BLM's anticipated role in recognizing and/or adopting recommendations of the advisory council as part of revisions to the draft RMP/EIS.

COMMENT: The sheer length and disorganization of Chapter 4 (e.g., weaving among alternatives, topic areas, cumulative effects, etc.) makes it virtually impossible to discern the crux of issues related to sage-grouse populations in the Billings/Pompey's Pillar planning area. What are the potential impacts to sage grouse populations within the Billings/Pompey's Pillar planning area due to each of the Alternatives examined as a function of proposing different land classifications and various NSO/CSU restrictions associated with those classifications? It is evident that the population status of sage-grouse in the planning is not well known. Are current populations increasing, decreasing or remaining stable? Without a clear description of the existing sage-grouse resource within the planning area, it is impossible to assess the predicted effects of various management alternatives on sage-grouse populations. Is the preferred alternative expected to result in populations that are larger, smaller, or remain at current level? How would this differ among alternatives?

Page 4-3, *4.1.1.3 Assumptions for Analysis*

COMMENT: The DEIS fails to discuss the assumed relationship of sage-grouse and sage-grouse habitat in MZ1 (as discussed throughout Chapter 3) compared to the Billings/Pompey's Pillar planning area. Most of the cited references that address effects of oil and gas development on sage-grouse have been conducted in the southeast Montana and Wyoming in the area of MZ1 where intensive development has been ongoing for decades.

Ramey et al (2011) report that: *"Current stipulations and regulations for oil and gas development in sage-grouse habitat are largely based on studies from the Jonah Gas Field and Pinedale Anticline. These and other intensive developments were permitted decades ago, using older, more invasive technologies and methods. The density of wells is high, due to the previous practice of drilling many vertical wells to tap the resource (before the use of directional and horizontal drilling of multiple wells from a single surface location became widespread), and prior to concerns over sage-grouse conservation. These fields and their effect on sage-grouse are not necessarily representative of sage-grouse responses to less-intensive energy development. Recent environmental regulations and newer technologies have lessened effects to sage-grouse."*

In addition, Taylor et al (2007) analyzed six oil and gas development areas in Wyoming with various degrees and ages of activity to determine sage-grouse population trends relative to intensity and timing of oil and gas development. They report that:

- Sage-grouse population trends are consistent among populations regardless of the scope or age of energy development fields, and that population trends in the six development areas mirror trends state-wide;
- Application of the BLM standard sage-grouse stipulations appear to be effective in reducing the impact of oil and gas development on male-lek attendance;
- Male lek attendance in areas that are not impacted by oil and gas development is generally better than areas that are impacted;
- Displacement from impacted leks to non-impacted leks may be occurring; research is needed to assess displacement and its implications for developing sage-grouse conservation strategies;
- Lek abandonment was most often associated with two conditions, including high density well development at forty-acre spacing (sixteen wells per square mile), and regardless of well spacing when development activity occurred within a the quarter-mile lek buffer;
- Extirpation of sage-grouse has not occurred in any of the study areas;
- Long-term fluctuations in sage-grouse population trends in Wyoming reflect processes such as precipitation regimes rather than energy development activity; however, energy development can exacerbate fluctuations in sage-grouse population trends over the short-term.

Page 4-281, *4.2.7.6.4 Impacts from Wildlife Habitat and Special Status Species:*

"Under Alternative D, the acreage designated for greater sage-grouse PPAs would be the same as Alternative C. Within PPAs, oil and gas leasing, development, and geophysical activities, as well as surface disturbance and disruptive activities would be similar to Alternative B. (Alt. B is Closed to

leasing and Alternative D is an NSO). This action would minimize surface disturbing and disruptive activities associated with fluid mineral development."

"The Greater Sage-Grouse PPA area would not be designated as an ACEC. However, the area would be managed with the same protections as described and provided for in the Greater Sage-Grouse PPA areas which would result in the same as described in that section (see above paragraph for a description of direct, indirect, and cumulative impacts)."

"Refer to the "Impacts from Livestock Grazing" section for a summary of impacts from the designation of grazing allotments in PPAs as management Category I allotments."

"Refer to Section 4.3.1.2, Fluid Minerals, for a summary of acres affected by Oil and Gas Stipulations by Alternative and Development Potential. Table 2-5, summarizes "Lease Terms and Stipulations by Alternative."

"Renewable Energy and ROWs in PPAs, RAs, and General Sage Grouse Habitat are designated avoidance areas under Alternative, with the same impacts as Alternative C."

COMMENT: The terminologies used in all sub-headings in Chapter 4 are perplexing. For instance - "*Impacts from Wildlife Habitat and Special Status Species*"– impacts on what? In reality, the true question is actually a reverse of that and should read "Impacts on Wildlife Habitat..." The revised planning documents need to expressly specify what the impact of each Alternative (and associated sage-grouse classifications, stipulations/management prescriptions and acreages) is on sage-grouse populations and habitat in the Billings/Pompey's Pillar planning area.

COMMENT: Why are Appendix AA (Monitoring of Sage-Grouse and Sagebrush Habitats) and Appendix AB (Mitigation Measures and Conservation Actions for Greater Sage-grouse Habitat) not included or referenced in this subsection?

Page 4-284, *4.2.7.7 Cumulative Impacts*

COMMENT: Chapter 3 and the impact discussion in Chapter 4 addressing predicted impacts to sage-grouse, appears to rely solely upon on research conducted in MZ1, an area that encompasses sage-grouse habitats in large areas of Montana, Wyoming, and the Dakotas. In so doing, the DEIS fails to address the cumulative effects of land management on sage-grouse projected to occur within the Billings/Pompey's Pillar planning area. Rather it relies on the broad discussion of MZ1 and MZ2. Moreover, this section repeats much of the material addressed in Chapter 3.

MZ1 is extensively referred to in Chapter 3; however, BLM fails to address the relationship of sage-grouse and their habitat in MZ1 to the BLM planning area. From the text in the DEIS, it appears that MZ1 is thought to be important for sage-grouse management; however, there is no reference to MZ1 in the cumulative effects section. Why does Chapter 3 have a section dedicated to MZ1 but impacts of the proposed Billings/Pompey's Pillar management actions are not addressed relative to MZ1?

The section on cumulative impacts would be an ideal place to address the relationship among planning and management activities in MZ1 and MZ2 and the Billings planning area. At a minimum, the Billings DEIS needs to address the potential cumulative effects of the proposed planning activities in the Miles City and Hi Line planning areas as they relate to the Billings/Pompey's Pillar planning area.

The potential cumulative effects discussion fails to address the effects of livestock grazing on private and public land on sage-grouse and other wildlife. The MCFO DEIS (page 4-60) states:

"Determining season-of-use and livestock numbers for grazing permits on a case-by-case basis would not necessarily result in high quality sage-grouse habitat. The reduction in grass height caused by livestock grazing in sage-grouse nesting and brood-rearing areas has been shown to negatively impact nesting success when residual herbaceous cover was reduced below approximately 7 inches needed for predator avoidance (Gregg et al 1994). Livestock grazing would potentially reduce suitability of breeding and brood-rearing habitat, which would impact sage-grouse populations (USFWS 2010a)."

While grazing may have the potential to affect sage-grouse habitat; the DEIS fails to discuss how sage-grouse habitat and displacement of sage-grouse have been affected by grazing practices in the planning area or even the broader region of MZ1 and MZ2. The revised planning documents must evaluate the cumulative effects of livestock grazing on public and private land on sage-grouse and their habitat.

Page 4-286, *"With regard to existing stipulations applied by the BLM (Walker et al 2007a), research has demonstrated that the 0.4km (0.25 miles) NSO stipulation is insufficient to conserve breeding sage grouse populations in fully developed gas fields because this buffer distance leaves 98 percent of the landscape within 3.3 km (2 miles) open to full-scale development."*

COMMENT: This statement is based upon the assumption that all oil and gas activities would involve "full-scale" development. *"Full-scale"* development needs to be identified in terms of well density and other disturbance factors. Is all future development in the planning area expected to be full-scale – full-scale in terms of the Pinedale Anticline or Jonah? These development areas are profound anomalies within the context of typical development throughout most of the Rocky Mountain region and we strongly object that they are being used as a baseline for examining potential development in other areas, particularly those in the Billings FO. The revised planning documents must base their analysis upon what has typically occurred within THIS planning area.

Appendix AB

Page AB-9, *"In cases where Federal oil and gas leases have been issued without adequate stipulations for the protection of sage-grouse or their habitats being provided in the applicable RMP decision, as revised or amended, include mitigation measures and conservation actions as permit Conditions of Approval (COAs) when approving exploration and development activities through completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA."*

COMMENT: Please explain in more detail how COAs would correspond with the annotation made in Table 2-5 "Lease Terms and Stipulations by Alternatives" that it applies to "New Oil and Gas Leases". Based on the paragraph above, it appears that COAs may apply to current lease areas as well as "new oil and gas leases"? Please explain in more detail how the information in Appendix AB corresponds to the specified lease terms and conditions, and what this would mean to lessees/producers. We also recommend that BLM clearly articulate how it intends to ensure such COA's would be administered to preserve valid existing lease rights.

Draft Montana DEIS Comparisons - Proposed Sage Grouse Habitat Management

This section includes questions generated from a comparative review of the HiLine, MCFO, and Billings/Pompey's Pillar DEISs, with a particular focus on the various management restrictions within sage-grouse habitat. Tables 1 and 2 serve as summaries of main sage-grouse management parameters and management prescriptions included in each of the three referenced RMP/EIS documents and serve as reference points for several specific comments presented below:

Table 1
Sage-Grouse Management Parameters on BLM-Administered Land

Planning Area	BLM Sage Grouse Habitat	Estimated # of Leks	BLM Sage-Grouse Habitat Acreages		
			General Habitat Acres	Protection-Priority Areas	Restoration Areas / Source Population Area
Miles City Field Office	2.5 Million acres	• 386 leks of unconfirmed status, • 455 confirmed active leks, • 33 extirpated leks, and • 19 confirmed inactive leks.	BLM Oil/Gas Lease[1]: • 800,000 acres BLM Surface: • 400,000 acres	BLM Oil/Gas Lease: • 1,403,000 acres BLM Surface: • 792,000 acres	BLM Oil/Gas Lease: • 289,000 acres* BLM Surface: • 109,300 acres* * Of these totals, 8,000 acres of Oil/Gas Lease and Surface are part of the Source Population Area.
HiLine	Unknown [2]	• 154 leks	BLM Administered Federal Mineral Estate (BLM-FME) [1]: • unknown acres [2] BLM Surface: • unknown acres[2]	*Grassland Bird/Greater Sage Grouse Priority Area:* BLM-FME: • 1,028,661 BLM Surface: • 930,265 acres *Sage Grouse Priority Protection Area:* BLM-FME: • 318,143	BLM-FME: • Unknown acres (3) BLM Surface: • 46,786 acres

Planning Area	BLM Sage Grouse Habitat	Estimated # of Leks	BLM Sage-Grouse Habitat Acreages		
			General Habitat Acres	Protection-Priority Areas	Restoration Areas / Source Population Area
				acres BLM Surface: • 298,772 acres	
Billings/ Pompey's Pillar	336,479 Acres[4]	• 19 active leks on BLM Surface (8 inactive) • 30 lek sites are on FME.	BLM-FME: • 116,452 acres BLM Surface: • 78,575 acres	BLM-FME: • 191,543 acres BLM Surface: • 154,140 acres	BLM-FME: • 63,437 acres BLM Surface: • 45,555 acres

[1] See comment below for questions concerning "Oil and Gas Lease" and Federal Mineral Estate" terminologies.

[2] See comment below for a question concerning total BLM acres of sage-grouse habitat within the HiLine Planning Area

[3] See comment below for a question concerning total BLM acres of "Federal Mineral Estate" within Restoration Areas (HiLine RMP/EIS)

[4] See comment below regarding the total acreage reported in Chapter 3, Page 3-85 (Table 3-29) of the Billings/Pompey's Pillar RMP/EIS.

Table 2
Management Prescriptions for Three BLM Planning Areas in Montana

Planning Area	BLM Sage-Grouse Habitat Categories			
	General Habitat Acres	Nesting/Brood Rearing	Protection-Priority and Source Population	Restoration Areas
Miles City [1]	Surface-disturbing activities would be avoided within 2 miles of leks CSU stipulations within 2 miles of leks Low-voltage power lines buried within 2 miles of leks	Surface-disturbing activities would be avoided within 4 miles of leks. Timing restrictions (BMP Appendix)	NSO	CSU stipulations

Planning Area	BLM Sage-Grouse Habitat Categories			
	General Habitat Acres	**Nesting/Brood Rearing**	**Protection-Priority and Source Population**	**Restoration Areas**
HiLine [2]	NSO within 1 mile of leks	CSU stipulations	NSO	---
Billings/ Pompey's Pillar	CSU stipulations NSO on "new oil and gas leases" within 0.6 miles of a lek. Timing restrictions within 3 miles of leks (March 1 – June 15)	Timing restrictions within 3 miles of leks (Mar.1 – June 15) CSU stipulations Geophysical exploration allowed on existing roads Timing-restrictions (Mar1. –June 15) within 4 miles of leks	NSO	NSO on "new oil and gas leases" within 0.6 miles of a lek. Timing restrictions within 3 miles of leks (Mar.1 – June 15) CSU stipulations Geophysical exploration allowed on existing roads Timing-restrictions (Mar1. –June 15) within 4 miles of leks

[1] Miles City indicates that sage-grouse protection areas will not be designated as ACECs and no compensation for impacts would be required in sage-grouse impacts (which may conflict with CSU stipulations)

[2] Hi Line also has NSO restrictions in sage-grouse wintering areas from Dec. 1 – March 31.

Comment: As summarized in **Table 1** above, when discussing specific acreages of sage-grouse habitat that would fall under various management restrictions (based on the respective Preferred Alternatives), the Billings/Pompey's Pillar DEIS and the HiLine DEIS reference BLM Administered "Federal Mineral Estate" and "Surface" under each main sage-grouse management classifications (e.g., General Habitat, Priority Protection Area, Restoration Area). However, the MCFO DEIS references "Oil and Gas Lease" and "Surface" as the two main categories of BLM administration. Please clarify the questions below:

- Are the categories of "Federal Mineral Estate" and "Oil and Gas Lease" intended to represent the same classification? If not, please explain any difference. If yes, please clarify terminologies among all Montana BLM RMP/EISs to aid the public (and potential operators) in consistently interpreting the proposed sage-grouse habitat restrictions.

- Are all proposed surface management restrictions applied equally regardless of whether the BLM Administered Lands in question are "Surface or "Federal Mineral Estate" and/or "Oil and Gas Lease"?
- Is it assumed that if a particular "Surface" acreage is under BLM Management then the mineral estate within that same acreage is also under BLM Administered "Federal Mineral Estate" and/or "Oil and Gas Lease" as well?

Comment: Are the 2.5 million acres reported as sage-grouse habitat under BLM Administration (within the MCFO planning area) a summation of the "Oil and Gas Lease" acreages reported for the three main management categories reported in MCFO DEIS Table 2.22? See summary in **Table 1** above (General Habitat Acres [800,000 acres], Protection-Priority Areas [1,403,000 acres] and Restoration Areas and Source Population Area [289,000 acres]).

Comment: Three appendices within the MCFO DEIS address management practices to avoid, minimize, and compensate for losses to sage-grouse habitat (i.e., BMPs Appendix, Minerals Appendix, and Fish and Wildlife Appendix). These appendices list specific practices and restrictions that apply to oil and gas development in sage-grouse habitat but do not specify which practices are stipulations that must be met for leasing and development. It is difficult to determine what an oil and gas operator will have to comply with relative to actions in sage-grouse habitat. **Table 2** (below) summarizes what appear to be the primary management restrictions, but they have been summarized from various sections of the DEIS and may not be comprehensive. The MCFO DEIS (and the HiLine and Billings/Pompey's Pillar DEISs accordingly) must identify required stipulations and guidelines (are these the same as BMPs?) in a comprehensive table within either DEIS Chapter 2 or 3.

Comment: Two of the three DEISs indicate that CSU stipulations will be developed for activities in various sage-grouse habitats; however, it is unclear in the MCFO DEIS how CSU stipulations will be developed. By comparison, the HiLine DEIS identifies how CSU stipulations will be developed in Appendix E.5 and the Billings Pompey's Pillar DEIS describes the development of CSU stipulations in Appendix C. Both the HiLine and Billings / Pompey's Pillar DEISs indicate that the proponent must prepare a plan to maintain the functionality of sage-grouse habitat to assist in identifying CSU stipulations. How will CSU stipulations be identified in the MCFO planning area?

Comment: Please clarify the total acreage of BLM-Administered acreage of sage-grouse habitat within the Billings/Pompey's Pillar planning area. Chapter 3, Page 3-85 (Table 3-29), reports a total of 336,479 acres. However the total appears to be 371,432 acres when summing the acreages presented in Chapter 2, Page 2-19 (Table 2-1). Please clarify.

Comment: Please clarify and/or provide the total BLM acres of "Federal Mineral Estate" that would be included within the "Restoration Areas" category for the HiLine planning area. This information appears to be missing in the HiLine DEIS.

Comment: Please clearly depict what management restrictions/prescriptions would be required for the two proposed ACECs within the HiLine planning area; specifically the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC (461,220 acres) and Greater Sage-Grouse Protection Priority Area

ACEC (930,265 acres). Jointly the two ACECs comprise over 1.39 million acres and represent a extensive land area.

Comment: To understand the effects of proposed sage-grouse management in the planning areas for the three BLM field offices, the sage-grouse resource (i.e., populations and habitat) that would be affected by various management directives need to be identified. The DEISs for the three planning areas do not present sage-grouse estimates for population sizes (see **Table** 1) so other metrics that represent the sage-grouse resource which will be subject to the proposed management directives need to be presented. To better understand the sage-grouse resource that would be subject to the management prescriptions identified in the three DEISs, we request the that following information be clearly stated in each DEIS's *Chapter 3 – Existing Environment*:

- Acres of various classes of sage-grouse habitat within each planning area on BLM-administered lands; and
- Number of leks on BLM-administered lands in the planning area.

Comment: As shown in **Table 2** above, the planning prescriptions for surface occupancy and controlled surface use for the three planning areas (MCFO, HiLine, and Billings/Pompey's Pillar) are variable which raises questions of how NSO restrictions were determined. Based on review of the three draft planning documents, it appears that all three relied on same data sources to address impacts of oil and gas development on sage-grouse. All planning areas have similar sage-grouse habitat conditions (i.e., all are in Sage-Grouse Management Zone 1), and all are anticipating some level of oil and gas development. It is unclear how different NSO restrictions around leks were developed. NSO restrictions around leks vary among the planning areas, with buffers around leks being 0.6, 1, 2, and 3 miles. Why are these NSO restrictions different for the three planning areas when they all relied on similar sources to define potential impacts associated with oil and gas development? Does sage-grouse vulnerability to impact or population viability differ among BLM planning areas?

Additional Literature Cited

Ramey, R., L. Brown, and F. Blackgoat. 2011. Oil and gas development and greater sage-grouse (*Centrocercus urophasianus*); A review of threats and mitigation measures. The Journal of Energy Development: 35(1); 49-77.

Taylor, R., M. Dzialak, L. Hayden-Wing. 2007. Greater sage-grouse populations and energy development in Wyoming. Accessed March 2013 at http://bogc.dnrc.mt.gov/reports.asp

CONCLUSION

We recognize that BLM endeavored to add to the project of revising several resource management plans proposed management decisions related to the Greater Sage-grouse in a very short time frame. As a result of the monumental task, BLM has failed to adequately to properly prepare the DEIS as described above in our comments. In addition to failing to meet the requirements of NEPA, BLM has used Greater Sage-grouse data to develop its plan alternatives that is both not applicable to the Billings FO and/or at such a scale that makes it impossible to make accurate and reasonable

land use decisions. Moreover, BLM has failed to provide maps of important wildlife habitat areas discussed in the DEIS. And, the absence of clear descriptions of how BLM intends to proceed with implementing a host of measures associated with its proposed management is another significant and fatal flaw in the analysis. Therefore, as stated at the beginning of this comment letter, we formally ask for a redraft of the DEIS to be published for comment and review before BLM finalizes the DEIS and issues a ROD.

Please do not hesitate to contact us if you have any questions regarding our comments. We appreciate the opportunity to provide them to BLM, despite the fact that an inadequate period for review was provided.

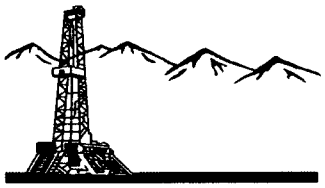
Sincerely,

David A. Galt
Montana Petroleum
Association

Claire M. Moseley
Public Lands
Advocacy

J. Spencer Kimball
Western Energy
Alliance

Cc: The Honorable Max Baucus
The Honorable John Tester
The Honorable Steve Daines
The Honorable Sally Jewel, Secretary of Interior
Neil Kornze – Acting BLM Director
Jamie Connell – Acting BLM Deputy Director
Kate Kitchell – Acting Montana BLM State Director



PUBLIC LANDS ADVOCACY

June 4 2013

Todd D. Yeager
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RE: MILES CITY FIELD OFFICE RESOURCE MANAGEMENT PLAN

Dear Mr. Yeager:

On behalf of the Montana Petroleum Association (MPA), Public Lands Advocacy (PLA) and Western Energy Alliance, following are comments in response to the Notice of Availability of the Draft Miles City Resource Management Plan (RMP) and Draft Environmental Impact Statement (DEIS) published in the *Federal Register* March 8, 2013. The signatories to these comments are all non-profit trade groups who represent the many facets of the petroleum industry. Our member companies have valid existing leases, current oil and gas production, and plans for future leasing, exploration, and production activities in the areas that will be directly impacted by the proposed revision of the Miles City Field Office (MCFO) RMP.

We preface these comments with frank criticism regarding BLM's lack of consideration for the public in this planning process. We ask how BLM believes interested parties have been afforded the ability to fully digest and provide coherent and substantive comments within a 90-day window on three major draft RMPs issued in Montana within a three week period. BLM's justification that it is under a strict schedule is wholly inadequate. We object to the limited public involvement opportunities provided in this process. It is unrealistic for BLM to expect the heavily affected oil and gas industry, not to mention the general public, to have the ability to conduct a complete review when they have been provided a very narrow window in which to review these three enormous documents. We are concerned BLM is making a rush to judgment without appropriate and accurate consideration of the impacts associated with the management considerations contained in the DEIS.

FAILURE TO COMPLY WITH NEPA

The purpose of analysis under the National Environmental Policy Act (NEPA) as well as BLM's planning process is for BLM to publically disclose the potential impacts of various management strategies under consideration by the agency. Specifically, the CEQ NEPA regulations at 40 CFR §1502.9(a) directs the agency to "*make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives*

including the proposed action." While BLM may have explained its management scenarios by alternative in the DEIS, it has omitted any useful explanation of potential impacts associated with each of the alternatives selected for detailed review in the document. The regulation at 40 CFR § 1502.14, requires presentation of the *"environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public."* Additionally, the regulation at § 1502.16 requires a *"scientific and analytic basis for comparisons"* of the information provided in accordance with § 1502.14 necessary to support the comparisons. The BLM's planning regulations similarly require the BLM to estimate the physical, biological, economic, and social impacts associated with each alternative in the RMP EIS. 43 CFR § 1610.4-6 Absent a sufficient description of the potential environmental impacts associated with each alternative, BLM has failed to meet both of the "twin purposes" of NEPA, understanding potential impacts and public disclosure of said impacts. See Baltimore Gas & Electric v. Natural Resources Defense Council, 462 U.S. 87, 97 (1983). For this reason alone, the BLM must prepare a revised draft environmental impact statement. 40 C.F.R. § 1502.9(a)

Further, BLM has failed to explain its rationale for selecting the Preferred Alternative. It is inadequate for BLM to simply identify a preferred alternative without providing detailed analysis that supports WHY such an alternative is in the best interest of the agency and public. According to the BLM's Land Use Planning Manual and Land Use Planning Handbook, II.A.7, pg. 22 (Rel. 1-1693 03/11/05), BLM must identify how the Preferred Alternative best meets the multiple use and sustained yield requirements of FLPMA. This lack of meaningful analysis constitutes a fatal flaw in the DEIS. Therefore, in accordance with 40 CFR 1502.0(a), we find the DEIS *"inadequate as to preclude meaningful analysis"* and recommend the agency prepare and circulate a revised draft which provides the analysis necessary to support each of the management alternatives, including the preferred alternative.

INADEQUATE MAPPING PROTOCOLS

The 1-Km resolution datasets and 1:2,000,000 scale maps used in the BLM planning process may be viable tools for multi-state or sub-continental planning efforts, but they become totally meaningless at field office or even county level. With respect to the Greater Sage-grouse, datasets and mapping at these scales grossly mischaracterize historic and potential habitat by including non-habitat as well as overlooking microhabitat characteristics, especially in diverse and fragmented landscapes. Likewise, threats to sage grouse are also entirely overestimated when using sub-continental scale mapping, such as that used by the MCFO planning effort, in particular for the Greater Sage-grouse. Most of the conventional literature regarding sage-grouse starts with the assertion that ~60% of historic range has been lost. This is based on work done by Schroeder et al in 2004, and has become the cornerstone of mainstream sage-grouse research. It too is at a 1:2,000,000 scale and provides the basis for much of the USFWS and BLM policy regarding sage-grouse. Of great concern, however, is the fact that this scale provides wholly unsuitable data when conducting any analysis or planning at FO level.

The most recent paper by *Knick et al* concluded that sage-grouse lek abandonment will occur with as little as 3% human disturbance with a 3-mile radius of a lek. Unfortunately, their methods apply

cumulative human impacts over the past 100 years to a static snapshot of lek status (active or abandoned). In other words, no consideration was given to the timing of the human disturbance with respect to the status of a lek in question. It is assumed that any lek abandonment was due to cumulative human impacts. This approach is unacceptable and our comments address these concerns.

THE PLANNING AREA HOLDS IMPORTANT OIL AND GAS RESOURCES

The MCFO planning area encompasses both the highly productive Williston and Powder River Basins. It is acknowledged in the Fluid Minerals Appendix to the DEIS that these Basins hold critically important proven reserves of oil and natural gas resources because they contain the structural components required to successfully explore for and develop new oil and gas resources. To date, 12,412 total oil and gas wells have been drilled within the MCFO planning area. According to the Montana Board of Oil and Gas Conservation (MBOGC) more than 329,263,475 barrels of oil and more than 558,401,479 thousand cubic feet of gas have been produced within the MCFO as of August 2011.

The DEIS points out that there are currently 52 companies with active operations within 205 recognized oil and natural gas fields in the MCFO planning area in 29 federal units and 287 communitization agreements. It also notes that approximately 74 percent of the wells 3,253 (or 3,722 wells as indicated on Minerals Appendix Table 14) wells drilled and completed over the last 10 years are still currently producing. The Appendix also explains that new technologies will allow companies, if allowed, to target high quality prospects and improve well placement and success rates resulting in the likelihood that fewer drilled wells will be needed to find new resources while the total production per well is expected to increase (DOE 1999). Consequently, the advent of fewer wells will reduce surface disturbance and associated impacts.

The Reasonably Foreseeable Development scenario provides a baseline projection that between 3,500 and 7,600 wells could be drilled within the MCFO planning area over the next 20 years if only standard lease terms were applied. From those wells, it is projected that nearly 6 million barrels of oil (approximately 1.4 million barrels of BLM minerals) and nearly 6 trillion cubic feet of natural gas (approximately 1.3 trillion cubic feet of BLM minerals) could be produced. We question whether these figures have been updated to comport with recently revised resource estimates issued by the US Geological Survey. We have not found this information was incorporated into the draft RMP documents and recommend that appropriate revisions be made before adopting a new planning document.

CHAPTER 1 - ISSUES AND MANAGEMENT

Page 1-3 – BLM indicates that *"issues identified during scoping drive the preparation of this RMP."*

COMMENT: Given the scope of fluid mineral activity within the MCFO and the importance of the planning area to the oil and natural gas industry, it would be a reasonable expectation that these resources would be a key factor in the planning process. However, this was not the case. None of the seven planning issues, which BLM claims were identified by the public, address the concerns

raised in PLA's March 4, 2005 scoping letter, which called for oil and natural gas resources to be fully considered during this planning process. Specifically, PLA requested the following issues be included in the planning process:

- *Management options that would protect or enhance opportunities to explore for and develop oil and gas resources*
- *Management options for surface resource management that are compatible with oil and gas resource management objectives*
- *Reasonable mitigation measures designed to limit or avoid impacts to surface resources as a means to lessen restrictions on access to public lands for leasing*
- *Lack of oil and gas resource potential or current industry interest will not be used as a basis for closing lands or imposing constraints on exploration and development activities*
- *Socio-economic considerations and benefits from oil and gas activities will be included*
- *Recognition and protection of Valid Existing Lease Rights*

Likewise, BLM's nine internally generated *management concerns* are limited to air quality/climate change; water, cultural, and visual resources; hazardous materials; socio-economic considerations; and environmental justice (negative impacts to human populations). Once again, BLM opted not to include management of oil and gas resources as a significant management concern, despite the fact that it acknowledges receipt of industry's concerns in Chapter 4 of the DEIS.

Since it is obvious that oil and natural gas, along with coal bed natural gas, exploration and development are significant activities which take place within the MCFO, we ask that BLM fully explain in its "response to comments" how the agency arrived at its decision to ignore the issues raised by industry during the scoping phase and to exclude oil and gas from its management concerns. We also question why BLM failed to include a map depicting where existing leases are located within the MCFO along with a description of how many federal acres are currently under lease. We called the FO to obtain this information and learned BLM could not provide a map showing leased acreage. In order for both the industry and the public to fully evaluate the planning documents, this information is of significant importance and its omission from the DEIS, coupled with the agency's demonstrated lack of concern with respect to management, reflects an unacceptable approach to oil and gas resource exploration and development throughout this planning process.

VALID EXISTING RIGHTS

Page 1-3 - *"All decisions made in the RMP are subject to valid existing rights."*

Page 2-12 - *"Upon plan approval (ROD), valid existing rights would not be changed by the decisions in this document until a permit or lease expired; following this, the area would be subject to the decisions reached in this document."*

COMMENT: We support BLM's recognition of valid existing lease rights. According to the Federal Land Policy and Management Act (FLPMA), the Mineral Leasing Act (MLA) and BLM's Planning 1600 Handbook, BLM does not have the authority to impose new stipulations on leases after they have been issued. Nor does BLM have authority to impose mitigation measures, such as Conditions of

Approval (COA), that exceed the terms and conditions of previously issued leases. In sum, BLM cannot deprive operators of their rights to develop pre-existing leases in accordance with the terms under which they were issued. BLM is limited to negotiating existing rights owners if BLM wishes to impose newly developed restrictions.

Of concern is that the DEIS failed to include protection of valid existing rights as a management goal under all alternatives. While BLM acknowledges that stipulations developed during this planning process can only be imposed on newly issued leases, it is apparent in reviewing the DEIS that BLM believes it has the authority to apply the similar restrictions on existing leases through the use of permit Conditions of Approval (COA) or by imposing compensatory mitigation requirements. In our view, the combination of so-called COAs and proposed compensatory mitigation requirement is tantamount to new lease stipulations and must be eliminated in the final EIS/RMP.

ENERGY DEVELOPMENT IS A LEGITIMATE USE OF PUBLIC LANDS

Under the FLPMA, BLM is required to manage the public lands on the basis of multiple use and sustained yield. 43 USC § 1701(a)(7) (2006) *" 'Multiple use management' is a concept that describes the complicated task of achieving a balance among the many competing uses on public lands, 'including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and [uses serving] natural scenic, scientific and historical values.' "* Norton *v. Southern Utah Wilderness Alliance*, 542 U.S. at 58 (quoting 43 U.S.C. § 1702(c)). *"Of course not all uses are compatible." Id.* We recognize the difficult task the BLM faces to manage public lands in the MCFO for multiple use. However, oil and gas development is a crucial part of the BLM's multiple use mandate and the agency must ensure that oil and gas development is not unreasonably limited in the RMP.

FLPMA clearly identified mineral exploration and development as a principal or major use of the public lands. (43 U.S.C. § 1702(l)) To that end, FLPMA requires the BLM to foster and develop mineral activities, not stifle and prohibit such development. It does not appear this was one of BLM's goals when preparing the MCFO DEIS. Rather, it appears the BLM is intent upon limiting what it considers to be a damaging presence on the federal lands. The BLM must reconsider its view of oil and gas development when preparing the final EIS/RMP.

COMPENSATORY MITIGATION

We categorically oppose the inclusion of compensatory mitigation in Alternatives B, C and D because it cannot be justified given the plethora of protective requirements with which industry must already comply to effectively reduce or eliminate impacts associated with oil and gas activities on public lands. Specifically, industry is already forced to conduct multiple resource surveys on behalf of BLM as well as to comply with numerous BMPs; COAs; restrictive regulatory thresholds; NEPA analyses; along with a host of additional federal agency and state requirements. We find it unconscionable that BLM states it intention to dig even deeper while failing to even disclose specific criteria, circumstances and the amounts when compensatory mitigation may be required. No clarification as to what constitutes a purported unacceptable level of change is provided in the DEIS. Further, what recourse will an operator have if it is believed such a requirement is excessive?

Absent specific guidance, resource specialists will be predisposed to requiring compensatory mitigation whenever it suits them, without regard for operator committed mitigation measures. The fact that a lease has been issued by BLM is clear evidence that certain levels of impacts are acceptable. When a lease is sold and issued by BLM, it contains specific stipulations designed to protect resource values during oil and gas operations. When the operator proposes an activity, it must comply with these stipulations. The Mineral Leasing Act, the regulations at 43 CFR 3101.1-2, as well as BLM's 1624 Manual, specifies that new stipulations cannot be applied to existing leases; this includes COAs or other measures that exceed the terms of a lease. Specifically, once a lease has been issued, BLM does not have the authority to prevent development unless the lease terms prohibit surface occupancy or development would result in "unnecessary or undue degradation," which could not be mitigated. Under 43 CFR 3101.2, guidance is provided detailing what authority the agency has to modify the parameters of the stipulations in order not to compromise valid existing lease rights granted by the lease.

BLM has previously cited as its authority to address the mitigation of impacts from FLPMA §102(a)(8), "...the public lands [will] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource and archeological values...." However, we remind BLM that FLPMA §102(a)(12) also directs that "the public lands [will] be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 U.S.C. 21a) as it pertains to the public lands." Moreover, while FLPMA §302(b) specifies *"the use, occupancy and development of public lands must be regulated by the Secretary through easements, permits, leases, licenses, or other instruments,"* the agency must also fully acknowledge the rest of this section which clearly directs that ***"these instruments include, but are not limited to, long-term leases to permit individuals to utilize public lands for habitation, cultivation, and the development of small trade or manufacturing concerns."*** [Emphasis added]

Compensatory mitigation directly conflicts with EPCA language which requires BLM to evaluate the extent and nature of any restrictions or impediments to the development of resources including: (B) post-lease restrictions, or delays on development for conditions of approval, applications for permits to drill, or processing of environmental permits. [See EPCA phase II, page xxi]. We view this new requirement as a gambit for BLM to capitalize on industry's willingness to work with the agency to ensure mutually beneficial energy projects can move forward.

BLM has evidently failed to acknowledge the extent of industry participation in and funding for partnership programs such as habitat improvement projects, public land restoration programs, which, in nearly all cases, were all entered into on a voluntary basis. Additionally, industry routinely pays for wildlife studies and inventories, such as wetlands, cultural, wildlife, and threatened and endangered species resources, and NEPA documents, in association with project permits. In light of the fact that BLM appears intent upon ignoring industry support and participation in partnership programs, direct support for resource surveys and NEPA documents that are properly BLM's responsibility, this new policy will likely severely curtail industry participation in partnership programs.

BLM is essentially establishing a new rule to require compensatory mitigation in areas it sees fit without consideration of lease rights. Moreover, it is evident that current commitments to operators with respect to APDs, rights-of-way or other projects could be modified as a result of this new policy. Contrary to FLPMA, such mitigation places more importance on aesthetic resource values over other uses, such as minerals and other commodity development. BLM must recognize that it is required to fully consider the need for mineral development along with the need for the protection of other resource values and that in some cases the need for mineral development may actually outweigh the need for the protection of other resource values. As such, BLM must comport with EPCA. Namely, *"public land managers [have a responsibility] to identify areas of high oil and gas potential and to evaluate the effectiveness of mitigation stipulations and conditions of approval in balancing responsible development of resources with the protection of other valuable resources in the area."* [pg xxiii]

We support BLM's decision not to require "compensatory mitigation" in the Preferred Alternative because it is bad policy, punitive, subjective and will likely lead to litigation.

ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

P. 2-9 - *"These proposed actions and alternatives submitted by these organizations were determined to be substantially similar to those actions and habitat areas considered within the range of alternatives in this RMP."*

COMMENT: We support BLM's decision to eliminate from detailed analysis the *"Conservation Groups Alternative"* for the very reason stated by BLM. Moreover, the groups' proposal to would add additional conservation measures for greater sage-grouse that far exceed those identified in *A Report on National Greater Sage-Grouse Conservation Measures* produced by the Sage-grouse National Technical Team ("NTT Report"). The proposal to designate two additional habitat types is unreasonable as are the constraints in the NTT Report, which are also over-zealous and unsubstantiated.

ALTERNATIVES

Page 2-3 - *"Five alternatives (A through E) were developed to offer a range of management options for resolving issues. Each alternative provides for varying levels of compatible resource use and development opportunities and each is consistent with law, regulation, and policy."*

COMMENT: We strongly disagree with the assertion that any one of these alternatives would meet the overall vision and management goals and multiple-use mandate of the FLPMA and ask that BLM fully explain in the FEIS its rationale for its assertion. Despite FLPMA's direction that *"the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970,* all but Alternatives A and D constrain the agency's management options to those designed to drastically impede future oil and gas development throughout the planning area, even though portions of the planning are currently under lease. Furthermore, BLM's preferred management strategy will severely compromise industry's ability to develop future oil and gas resources because it dismisses advances in drilling and production techniques in favor of

overregulation and duplication of state and federal regulatory programs. The increase in the use of unnecessarily restrictive stipulations, COAs or so-call BMPs will significantly restrict regional earnings, jobs, and tax revenue.

In addition to FLPMA, § 363 of the Energy Policy Act of 2005 (EPAct) requires federal land management agencies to ensure that lease stipulations are applied consistently and to ensure that the least restrictive stipulations are utilized to protect the resource values to be addressed. The DEIS also ignores established BLM policy which requires that "*the least restrictive stipulation that effectively accomplished the resource objectives or uses for a given alternative should be used.*" Moreover, BLM has failed to demonstrate that less restrictive measures were considered but found insufficient to protect the resources identified. A statement that there are conflicting resource values or uses does not justify the application of severe NSO restrictions.

In April 2003, the BLM directed field offices to comply with four Energy Policy and Conservation Act (EPCA) planning integration principles:

1) *Environmental protection and energy production are both desirable and necessary objectives of sound land management and are not to be considered mutually exclusive priorities.*
2) *The BLM must ensure appropriate accessibility to energy resources necessary for the nation's security while recognizing that special and unique non-energy resources can be preserved.*
3) *Sound planning will weigh relative resource values, consistent with the FLPMA.*
4) *All resource impacts, including those associated with energy development and transmission will be mitigated to prevent unnecessary or undue degradation (BLM 2003a)."*

Under EPCA BLM is required to identify impediments to oil and gas development. It was the intent of Congress that access to energy resources be improved as indicated in the Energy Policy Act and Conservation Act of 2000 and the Energy Policy Act of 2005. BLM recognized the intent of the both Phases I and II of the EPCA review when it issued Instruction Memorandum 2003-233, Integration of the Energy Policy and Conservation Act (EPCA) Inventory Results, into the Land Use Planning Process. Consequently, BLM Field Offices are now required to review all current oil and gas lease stipulations to make sure their intent is clearly stated and that stipulations utilized are the least restrictive necessary to accomplish the desired protection. Moreover, the IM directs that stipulations not necessary to accomplish the desired resource protection be modified or eliminated during the planning process.

Since the purpose of integrating the EPCA results into planning is intended to determine whether existing resource protection measures are inadequate, adequate or excessive, we recommend the MCFO reevaluate its management decisions accordingly and make requisite changes to the FEIS. If BLM decides not to reevaluate its decision, we specifically request a response from BLM in the Final EIS explaining why this was not done.

It seems BLM intends to adopt a new policy whereby multiple use activities, including oil and gas development, will be held subservient to other resource values considered in the planning process, echoing the obsolete belief that oil and gas development destroys air, water and fish/wildlife habitat. This is clearly the misguided basis for much of the document and the most of the alternatives, particularly the preferred alternative. Therefore, since the purpose of integrating the EPCA results into planning is intended to determine whether existing resource protection measures

are inadequate, adequate or excessive, it is even more crucial that the MCFO reevaluate its management decisions accordingly and make requisite changes to the FEIS. Discussion of the specific requirements of a resource to be safeguarded, along with a discussion of the perceived conflicts between it and oil and gas activities must be provided along with an analysis of available mitigation measures. Clearly, an examination of less restrictive measures must be a fundamental element of a balanced analysis and documented accordingly in the FEIS.

We also point out that documentation of the need for change is required by BLM's 1601 Planning Handbook at § VI, *Determining if New Decisions are Required*, Part D, *Documenting the Determination to Modify, or Not to Modify, Decisions or NEPA Analysis, which directs* that "***it is important to document decisions to modify or not modify the land use plan or NEPA analysis when these decisions are reached as part of the formal land use plan evaluation process*** *(Section v). (Emphasis added)* We ask BLM to explain its rationale to exclude this requirement from the DEIS in final EIS.

When finalizing the MCFO RMP, we urge BLM to ensure its compliance with the FLPMA, EPAct, EPCA, and its own guidance and handbook by reducing rather than increasing impediments to federal oil and gas leasing and development. As currently presented, the BLM has failed to comply with this policy because it is proposing huge new impediments to domestic energy development, especially under Alternatives B and E.

ALTERNATIVE A

Page 2-2, *"would be the continuation of present management in the planning area and provide baseline information from which to identify potential environmental consequences when compared to the other alternatives. If selected, this management option would follow the existing RMPs. Key components of Alternative A include those described below."* [Emphasis added]

COMMENT: We strongly object to the No Action Alternative being used as the baseline for determining potential environmental consequences when compared to other alternatives. Alternative A is far from a baseline because it reflects already implemented prescriptive management decisions and restrictive lease stipulations. We question why BLM did not determine the effectiveness of the measures currently in place based upon the baseline data collected before current management was implemented. In so doing, BLM would get a picture of how current management is actually working. Clearly, BLM is utilizing this methodology to arbitrarily "raise the bar" in order to rationalize future management options that are in reality unjustifiable.

We ask BLM to clarify why the baseline provided by the Reasonably Foreseeable Development scenario was not used when determining what level of restrictions should be placed on current and future oil and gas exploration and development activities.

Moreover, the DEIS fails to provide any information or documentation regarding the purported inadequacies of current management of the MFCO. While we recognize that the RMP needs to be revisited on a somewhat regular schedule, all proposed changes need to be clearly articulated in the DEIS illustrate why any such change is necessary. This has not been done in the DEIS.

ALTERNATIVE B

As stated previously in these comments, we do not concur that Alternative B is consistent with the agency's multiple-use mandate. As described on page 2-3, this alternative would *"emphasize the improvement and protection of wildlife habitat and sensitive plant and animal species, improvement of riparian areas, and implementation of management actions that improve water quality and enhance protection of historic and cultural sites."*

COMMENT: BLM has not provided any discussion that demonstrates current management practices have proven inadequate for improving or protecting wildlife and plant species. In addition to unnecessarily restricting multiple-use activities within the planning area, we seriously question BLM's ability to implement such an alternative due to current staffing and funding limitations. The National Environmental Policy Act (NEPA) at **§ 1502.14** requires a "reasonable range" of alternatives to be considered. One would expect that a primary aspect of reasonableness would have to be the ability of the agency to actually implement this management option within 10 to 20 year plan implementation window. Therefore, we ask BLM to explain the viability of Alternative B as a management option to be considered in detail.

COMMENT: We categorically oppose the concept of compensatory mitigation included in Alternatives B, C and D because it cannot be justified given the plethora of protective requirements with which industry must already comply to effectively reduce or eliminate impacts associated with oil and gas activities on public lands. Specifically, industry is already forced to conduct multiple resource surveys on behalf of BLM as well as to comply with numerous BMPs; COAs; restrictive regulatory thresholds; NEPA analyses; along with a host of additional federal agency and state requirements.

ALTERNATIVE C

Alternative C is described as allowing *"resource use (e.g., energy and mineral development and other commodity uses) while providing protection to sensitive resources. Alternative C would allow for greater production levels of minerals, greater development of public lands, and more livestock grazing than Alternative B."*

COMMENT: The statement that this alternative is less restrictive than Alternative B does not explain why BLM it is an alternative. What was BLM's motivation for analyzing this alternative in detail in the DEIS? If it was simply to help provide a "reasonable range' of alternatives, BLM needs to explain how it would provide more appropriate levels of management and protection that are not currently being provided under current management.

ALTERNATIVE D

BLM describes Alternative D as providing *"the widest range of uses, emphasizing recreation, mineral, and energy development, and identifies areas most appropriate for these uses. Although similar to Alternative C, Alternative D proposes the least restrictive management actions for energy and commodity development but maintains protections to resources required by laws and regulations.*

With the exception of sage-grouse habitat management, restrictions to protect resources would be implemented to the extent necessary to meet legal requirements."

COMMENT: Alternative D provides the management options BLM needs to effectively accomplish its goals and desired future conditions within the planning area. Moreover, Alternative D more clearly recognizes the multiple use objectives established in FLPMA. Nevertheless, under this alternative, BLM would apply CSU stipulations to 5.3 million acres of the planning area, although no rationale has been provided. Despite the fact that no rationale has been presented for increasing restrictions over what is currently being implemented, the industry can more likely continue working under the parameters of this alternative because the need for continued exploration and development activities for oil and gas resources would not be as severely compromised as it would under alternatives B, C and E. Moreover, BLM has failed to describe how implementation of this alternative would not meet the resource needs of the planning area.

We also request an explanation regarding why geophysical exploration would be prohibited on 700,000 acres of BLM surface in the planning area, as depicted on Table 4-87. No explanation for this restriction is provided in the DEIS. BLM appears to have ignored that the fact that its own regulations were designed to ensure that virtually no surface damage is associated with geophysical activities. Specifically, BLM's 3150 Manual provides specific guidance and requires a site-specific mitigation/operating plan to be in place prior to commencement of seismic activities. In concert with these requirements, evidence of properly conducted seismic surveys fades rapidly, regardless of the technology used. Therefore, under no circumstances should geophysical exploration activities be prohibited regardless of which alternative is selected.

PREFERRED ALTERNATIVE E

Page 4-272 acknowledges that *"Restrictions applied to protect certain surface resources would prevent drilling of some BLM-administered wells...Large contiguous blocks of restricted mineral estate would inhibit oil and gas leasing and development in the planning area...Restrictions for disruptive activity (including noise) on existing and future development would inhibit drilling and development."*

COMMENT: Previous comments regarding the other alternatives also apply to the preferred alternative. While BLM may have identified the proposed changes in management and the impacts this new management would have on all other resource uses, there is no science-based documentation provided in the DEIS which informs the public such changes are needed or that justify such radical changes. This omission constitutes a major, fatal flaw in the DEIS which must be addressed in the FEIS. Therefore, we strongly oppose adoption of this alternative because it would impose unwarranted, overzealous restrictions on all uses, including oil and gas, within the planning area without proper justification.

SECTION SPECIFIC COMMENTS

Following are additional section specific comments on the DEIS which support our conclusion that BLM has failed to comply with the analysis requirements of NEPA.

AIR RESOURCES

GENERAL

We recognize that BLM has authority under FLPMA to "*manage lands in a manner that will protect the air quality and atmospheric values; and that BLM may manage the pace, place, density and intensity of leasing and development to meet air quality goals.*" However, FLPMA does not grant BLM the authority to establish an air quality and management program separate from the State of Montana to regulate air quality. Since the air quality program is only within the State of Montana's purview, BLM's proposal constitutes an unauthorized, unnecessary duplication of effort and waste of diminishing federal revenues; such action will only result in confusion, conflict, and possible litigation.

Specifically, the BLM neglects to take into account, on several levels, that Montana Department of Environmental Quality (MDEQ) operates a fully approved air quality program. The program not only controls major sources of air pollutants, but operates a permit program that controls emissions from minor sources. These requirements are neglected in the accounting of emissions and the implementation of controls. The DEIS fails to acknowledge the US Environmental Protection Agency (EPA) approved air quality registration program for the oil and gas industry in which sources are required to control emissions and the State conducts compliance investigations to ensure that the requirements are met. As such, members of industry work closely with MDEQ to ensure the proper implementation of these program elements.

We are perplexed that while BLM acknowledges Montana's primary authority over air resources and the fact that the planning area has "good" air quality, BLM feels compelled to go beyond the authorities of both the State and Federal CAAs to regulate and mitigate oil and gas industry sources through the DEIS. Clearly, EPA is confident in the MDEQ's ability to monitor and protect the air quality in the state. Moreover, we intend to continue working with MDEQ to ensure that the oil and gas industry plays a role in maintaining the current status.

AIR RESOURCE MANAGEMENT PLAN - APPENDIX

EMISSIONS INVENTORIES

GENERAL

We disagree with the emission estimates used in the DEIS and are opposed to BLM's stated intention to obtain further emissions information for use in model evaluations. Emissions inventories are calculated in a number of different ways for a number of purposes. For example, BLM intends to require industry to calculate potential emissions to determine the applicability of the state's permitting program.

COMMENT: Industry already provides estimated annual actual emissions to the State for fee purposes. To determine valid modeling results, which conservatively estimate impacts, there must

be a clear understanding of the emissions data and an accurate accounting of these emission estimates. The DEIS documents BLM's intent to implement significant mitigation measures on individual facilities based on the results of the modeling. We object that BLM has failed to provide opportunities for operators to review the emission calculations that it plans to use in future modeling.

An example of overestimation is BLM's greenhouse gas (GHG) emission estimates. The emissions predicted by BLM are higher than actual because federally approved regulations that were already designed to reduce GHGs were not taken into account. Even with this conservative approach, no significant impacts were found even with the overestimated GHG emissions increases from the oil and gas industry. It is imperative for the DEIS to accurately document potential impacts.

MODELING

The DEIS discusses several different levels of modeling that have either been conducted or will be conducted in the future.

AREMOD Modeling

COMMENT: AERMOD modeling was performed and it was determined, even with this conservative analysis, that no violations of the National Ambient Air Quality Standards (NAAQS) are expected. It is worth noting that this modeling used emission estimates that are higher than the Preferred Alternative. BLM also analyzed the PSD increments. It is important to note that PSD increment analysis does NOT apply in this scenario. This analysis is inappropriate, is misleading, or, may have been misused. On page 4-8, BLM attempts to make a clarification to this analysis by stating, "*The following PSD analysis is not a regulatory analysis; its purpose is to provide context for evaluating potential air quality impacts.*"

The numbers documented in the DEIS show exceedances of PSD increments. The analysis is not appropriate for evaluating air quality impacts and must be removed from the document. It is the responsibility of MDEQ to implement the PSD permitting program for major sources. It is inappropriate for this analysis to be applied on a wide scale using conservative estimates and producing what can be believed to be real impacts. This is an unsuitable use of this analysis process and is very misleading to all interested parties. Also, under any and all alternative scenarios, BLM concludes that current levels and any future potential increases in emissions are expected to comply with the NAAQS and MAAQS. We strongly recommend BLM revise its approach in the final EIS and ROD.

Future Modeling Photochemical Grid Modeling and Calpuff

P. 4-16 - *The DEIS states that "photochemical grid modeling (PGM) and CALPUFF modeling will be conducted in the future and that PGM is dependent on new emission inventories being created."*

COMMENT: Both of these projects are being conducted outside of the BLM's jurisdiction. Additionally, there is no indication that BLM will afford the public an opportunity to comment on

these future actions. We are extremely concerned that the oil and gas industry will be impacted by the results of these emission inventories and modeling exercises in the form of potential mitigation measures being imposed on lease agreements for individual operations. Again, the DEIS mentions collaboration with AQTW and MDEQ on development of protocols for future modeling; however, there is no mention of seeking industry involvement in this process. While there is mention of making results available to the public, BLM does not indicate it will solicit public participation when determining the methods of conducting the modeling. We strongly urge BLM to involve the affected parties, in particular the oil and gas industry, in determining the need for and scope of future modeling efforts.

While not clearly documented, it is our understanding that the 2011 emission inventory, that is being completed outside of the DEIS, is going to be extrapolated to 2015 with BLM's "understanding" of what new sources are or will be in existence. We acknowledge that BLM expects additional sources by 2015. However, these emissions estimates must take into account the amount of field electrification that is occurring. Moreover, gas sales on the upstream side of industry are expected to increase significantly as pipeline availability increases. For example, within the last year industry electrified hundreds of oil and gas wells and, as a result, no longer has natural gas lifting engines or gasoline-fired recycle pump engines. Furthermore, more gas is being sold from sites as the natural gas pipeline/processing infrastructure has been expanding, thus "actual" flaring data would not be representative to use in extrapolating for future predictions. The MCFO should also take into account the reduction in emissions associated with the New Source Performance Standards (NSPS)[1] and the National Emission Standards for Hazardous Air Pollutants (NESHAP)[1] also known as Maximum Achievable Control Technology (MACT) standards. Implementation of these regulations will reduce emissions in the planning area. All of these items lead to considerable concern about BLM's ability to accurately estimate emissions, and thus ambient impacts.

MONITORING

P. 4-16 - *All major pollutants of concern are being monitored throughout the area and have shown compliance with the NAAQS in the planning area. It is even stated that the purpose of the monitor is to determine ongoing compliance with the standards and to provide background information to be used in modeling.*

COMMENT: We question this approach because the PM_{10} monitors are not appropriately placed to measure PM_{10} as defined by MDEQ. The document even quotes MDEQ as stating that the Birney and Broadus sites' PM_{10} monitoring values are "not indicative or representative of general PM_{10} concentrations in the desired monitored area" (Page 10-ARMP). Therefore, these monitors would not provide a reliable measure of PM_{10}, and, therefore, must not be used to implement mitigation measures associated with PM_{10}. As shown in Table 3-2, page 3-13 of the DEIS there is already a significant amount of air quality monitoring that is ongoing for not only a variety of pollutants, but also wet deposition and visibility monitoring in this Montana planning area.

We strongly object to the agency's use of any newly created "mitigation design value." Because the Clean Air Act has already established extensive actions based on actual monitoring data, BLM should

[1] 40 CFR 60, *et seq.* and 40 CFR 63, *et seq.*

only use approved design values prior to implementing mitigation measures on sources in the planning area. More fundamentally, since MDEQ already has primacy over air, and an approved program along with the requisite expertise to handle the calculations of an appropriate design value, there is no need for BLM to develop a costly, separate program.

MITIGATION MEASURES

P. 4-15 - *BLM acknowledges that the planning area is an area of "good" air quality and states that it intends to use both monitoring and modeling data to "identify mitigation measures to address unacceptable impacts"*

COMMENT: We are disturbed that BLM has not included a definition as to what it believes constitutes "good" air quality and what "unacceptable impacts" would be. As such, it is impossible to provide comments in any meaningful manner when these terms are undefined and the information used to make these decisions has not and apparently will not be publically vetted.

P. 4-16 - *"The adaptive management strategy for oil and gas resources provides the flexibility to respond to changing conditions that could not have been predicted during RMP development. The strategy also allows for the use of new technology and methods that may minimize or reduce impacts."*

COMMENT: This vaguely defined strategy leaves a great deal of uncertainty for the industry in planning development because BLM fails to include assurances even after industry has followed all air quality regulations applied through MDEQ to comply with both the Federal and State Clean Air Act(s), that no further mitigation measures will be placed on individual minor sources.

The DEIS lists a number of initial mitigations that will require implementation measures upon signature of the ROD. Several of the measures deal with fugitive dust control. While the industry agrees fugitives should be controlled, it also believes that meeting State requirements (Administrative Rule of Montana 17.8.308)[2] clearly satisfies BLM's objectives. Therefore, these measures are unnecessary.

P. 4-7 - *Emissions inventory estimates were determined based on state and federal emission standards with one exception. Emission estimates for diesel drill rig engines are based on the use of Tier 4 non-road engine standards, which would be required by BLM as an initial mitigation measure.*

COMMENT: The State already successfully manages an EPA approved air quality program; and, it has been demonstrated the oil and gas activities with the planning area will not result in diminished air quality. Consequently, the requirement to implement Tier 4 engines is unnecessary, exceeds BLM's statutory authority and must, therefore, be eliminated.

The DEIS indicates in the initial mitigation measures that sources will be required to consolidate facilities to reduce fugitive emissions. Clearly, these consolidation determinations are both

[2] While this is a Montana rule, it is federally enforceable via the State Implementation Plan (SIP).

redundant and overly restrictive because emissions are already mitigated through existing regulations. No additional control is required of BLM.

We object to BLM's attempt to exceed both federal and state regulations by requiring compliance with a New Source Performance Standard (NSPS)[3]. What is BLM's justification for exceeding established programs? The NSPS standards were developed and applied at the national level only after considerable research and public participation. BLM's new requirement would be arbitrarily applied to sources where it is not applicable.

As noted above, BLM is basing its proposed mitigation measures on emission estimates and modeling that are outside the jurisdiction of the agency. The DEIS indicates that, with regard to oil and gas emission sources, emissions were estimated conservatively because they do not include more stringent emission controls mandated by USEPA on August 16, 2012, which will be effective prior to final issuance of the DEIS.

While the *"Monitoring-Based Mitigation"* process is clearly a deliberative process to determine cause or contribution, the proposed enhanced mitigation measures are excessive in light of that fact that the determination is made based on a single source contribution of a single exceedance at a single monitor. A single exceedance, even if the data proved to be accurate, does not constitute a violation of the standard and may not even be indicative of a trend or pattern. The potential enhanced mitigation measures themselves are inflexible and in only one instance would BLM take into account technical and economic feasibility. Also, the DEIS states that BLM can decide on any additional measures it chooses instead of deferring to the state's expertise and authority. Again, this is done with no involvement with the public or the regulated industry and is inappropriately based upon a single exceedance at a single monitor. The *"Determination of Enhanced Mitigation Measures after Photochemical Grid Modeling Completion"* section determines potential enhanced mitigation measure implementation based on reaching 85% of the design value. However, it BLM has failed to outline the process for identifying the facilities to which this would apply.

AIR QUALITY RELATED VALUES (AQRV) ANALYSIS

P. 4-14 - The DEIS discusses the fact that AQRV analysis will be fully conducted using the CALPUFF and PGM modeling results.

COMMENT: We object that there is would be no opportunity afforded the public to comment on this analysis. We also object that potential mitigations will be imposed based on the outcome of the analysis.

WATER RESOURCES

Page 4-55 - *"Left untreated, produced water discharge and infiltration or leaking produced water disposal pits would be **likely** (emphasis added) to reach stream channels via subsurface flow, which would decrease water quality."*

[3] 40 CFR 60, *et seq.*

Page 4-56 - *"Produced water spilled or treated in infiltration, unlined, or leaking evaporations impoundments (water disposal pits) would impact shallow groundwater aquifers and contain the potential to reach and contaminate surface water through groundwater interface."*

COMMENT: The basis of the above statements is questionable; does BLM have site-specific monitoring data as justification? Produced water cannot be discharged to live surface water in Montana without treatment in conjunction with a Montana Pollution Discharge Elimination System (MPDES) permit. Effluent limits set by the DEQ for direct discharge ensure no degradation will occur. Discharge to impoundments within an ephemeral drainage would also require an MPDES permit and a non-degradation waiver for groundwater.

Further the guidance (2009) developed by the BLM, DEQ and MBOGCC prohibits infiltration pits within 500 feet of any stream feature (blue line) on a 1:24,000 scale map. This would typically restrict pits from being located within flood plains. In the event monitoring wells encounter alluvial material and the potential existed for water to migrate towards stream beds, additional monitoring wells and surface water monitoring is required by the guidance. If water is evidenced in a stream channel or monitoring well within the alluvium, the guidance clearly specifies the discharge would be terminated and reclamation commenced or a Montana Pollution Discharge Elimination (MPDES) permit must be obtained prior to renewed discharge.

The evidence in Wyoming conflicts with the statement that 1) "Infiltration from water disposal pits would be likely to reach stream channels...." and 2) "... would impact shallow groundwater ...." Between August 2004 and December 2009, approximately 2,013 impoundments with nearly 2,300 associated monitoring wells or borings were evaluated for potential groundwater impacts. Of these, only 273 impoundments required permits and monitoring. In 2010, 170 of these wells were studied in three hydrologic settings, 72% exhibited stabled groundwater chemistry (no change), 12% show TDS and sulfate concentrations on an upward trend, 6% have flushed (increase with a decrease back to normal over time), and 6% exhibit an improvement in water quality. (Steinhorst 2010)

Given this information all references to surface and groundwater degradation being "likely" or "would occur" must either be removed or changed to "unlikely" or "may possibly occur".

Page 4-51, 1st paragraph, 3rd sentence , Page 4-58, 1st paragraph, 4th sentence – *"Although impacts from surface disturbance would typically be localized and short term, lasting until vegetation was reestablished, there would be the potential for severe and long-term effects to water quality and overall stream function (however, the beneficial uses would be maintained)."*

Existing BLM requirements, which are unjustifiably expanded under the preferred alternative (E), already limit activity on flood plains and provide for a buffer around water bodies and ephemeral streams. Drill pads must be re-vegetated and only primitive two track roads are to be used to access wells. We strongly recommend, therefore, that the adjectives "severe and long-term" be removed or specified for individual activities. Once vegetation is reestablished on most of the areas sited in the proceeding sentences, none of the impacts referenced, such as accelerated erosion,

increased overland flow, decreased infiltration and degradation of water quality through increased sedimentation, turbidity etc. etc...would occur.

CULTURAL RESOURCES

Cultural resource sites vary widely in quality of preservation, size, density relative to a geographic area (Chapter 3, Page 3-90 identifies the known site density at an average of one site per 100 acres in the planning area, with density on BLM administered lands at one site per 195 acres), contemporary cultural importance, and scientific value. While recognizing that prehistoric and historic sites are a finite resource, their management must also be afforded a level of flexibility and discretion as dictated by site analysis, and the mitigation measures employed to protect discrete sites must therefore vary according to their scientific or contemporary cultural significance. Some prior general knowledge as to how these mitigation measures might be employed is vital to planning purposes for other land uses.

Table 2.1, Action 13 (Surface Disturbing Activities) - Alternative E states, *"Surface-disturbing activities would be allowed in significant cultural sites as long as the activities would not affect or have an impact on the quality and setting of sites."*

COMMENT: This language is unacceptably vague regarding the parameters in which surface disturbing activities might be allowed to take place. Alternative D, on the other hand, details that site avoidance will be practiced when possible, but when avoidance cannot be achieved, the steps that will be taken to minimize any impacts are outlined. We recommend that BLM adopt the framework outlined in Alternative D in the final EIS and Record of Decision (ROD) because it is vital for planning purposes. It is crucial that BLM's management framework recognize that conflicts in land uses are inevitable and allow for project planning to recognize and meet the mitigation needs of individual sites.

Table 2.1, Actions 14 and 15 (Oil and Natural Gas Leasing): Alternative E indicates that oil and gas leasing will be offered in significant prehistoric/historic cultural sites, National Historic Landmarks (NHLs), and historic battlefields with a No Surface Occupancy (NSO) stipulation. Page MIN-49 in the appendices details significant sites as those meeting the criteria for allocation as scientific use, conservation use, traditional use, public use, and experimental use under the guidance of BLM Manual 8110, those eligible for inclusion on the National Register for Historic Places (NRHP), and those identified as Traditional Cultural Properties. An exception is possible if the lessee or project proponent can demonstrate that impacts can be avoided and provides the appropriate planning documentation.

COMMENT: Avoiding surface disturbance may certainly be warranted in some cases. However, Alternative E fails to account on the front end for variability among sites and provides little opportunity for management flexibility. Alternative D provides that discretionary framework outlined in Alternative E's exception clause in which each site can be analyzed to determine the appropriate mitigation measures to protect cultural and historic resources without potentially placing resources out of reach, and without having to petition for an exception to the management

rule. We recommend that BLM utilize the guidance outlined in Alternative D rather than the unnecessarily rigid approach contained in Alternative E in the final EIS and ROD.

Page MIN-50 of the appendices states that under the preferred alternative, the NSO stipulation for NHLs and historic battlefields *"also extends to the viewshed in which they occur."*

COMMENT: We strongly object to this blanket use of the NSO stipulation because does not account for the temporary nature of oil and gas developments. We recommend that BLM instead utilize a ¼ mile NSO buffer zone around NHL and historic battlefields because in so doing adequate protection would be provided the sites while not needlessly limiting exploration and development opportunities in the area. We remind BLM that the most visible equipment used for oil and natural gas development is on site for limited periods measured in weeks for wells that may be productive for many years. The remaining infrastructure at a well pad site is much easier to camouflage and mitigate any visual impacts. Since Alternative D offers a more common sense discretionary approach, we urge BLM to incorporate this direction in the FEIS and ROD.

Page 3-89: BLM states it is *"responsible for ensuring that lands leased for development (such as oil, gas, or coal development) are examined prior to allowing any development action to occur to determine the presence of cultural resources and to specify mitigation measures."* It further states that the requisite site identification surveys will be completed *"at the application for the permit to drill (APD) stage."*

COMMENT: We recognize that proper surveys are necessary to ensure compliance with the various federal statutes addressing cultural resource protection. We encourage BLM to provide assurances that these surveys will be completed expeditiously so as not to unnecessarily delay the ability of mineral lease holders to develop oil and natural gas resources.

PALEONTOLOGICAL RESOURCES

Similar to cultural, paleontological resources also widely vary in both density and scientific value. While many fossil remains are widespread and well-studied, others may be rare and poorly understood. Numerous resources undoubtedly remain undiscovered and may be of high scientific value. Management of this resource concurrently with others requires the ability to assess the fossil resources present and make common sense discretionary management decisions accordingly.

Table 2.1, Action 7: Both Alternatives D and E state that *"Surface-disturbing activities would be allowed as long as the activities would not impact the quality and setting of significant paleontological localities or areas that met the criteria for designation."* Page PAL-18 of the appendices describes a paleontological locality as a *"geographic point or area where a fossil or associated fossils are found in a related geological context."* Significant paleontological resources are described on page PAL-19 of the appendices as *"(a)ny paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils..."*

COMMENT: The appendix offers further specifics for "significant" paleontological resources, including rare or unknown species, high quality of preservation, previously unknown anatomical or other characteristics, etc., yet the initial definition including any fossil remains of "scientific interest" leaves the designation comparatively vague and open to inconsistent interpretation. We recommend that BLM provide specific parameters for determining which resources may be scientifically important.

Chapter 2, Action 8: Alternative E, the preferred alternative, imposes a No Surface Occupancy (NSO) stipulation in all paleontological localities.

COMMENT: First, this proposed action does not specify to what level of paleontological significance the NSO would apply, leaving open the option to apply this restriction on all localities regardless of their scientific value. Alternative D provides for a more discretionary approach to oil and gas lease stipulations, specifying that these would apply only to significant localities, and allowing for a Surface Use Plan of Operations (SUPO) to be applied for mitigation purposes rather than defaulting to an NSO stipulation in all cases. Second, we question why a controlled surface use stipulation wouldn't provide adequate protection of such resources. The CSU stipulation has been used historically by BLM throughout the public lands states to address Paleontological resources. What justification does BLM have to resort to a NSO stipulation in the MCFO?

VISUAL RESOURCES

Evidently, BLM has ignored the fact that oil and natural gas development impacts to viewsheds are characteristically temporary in nature. While certain infrastructure remains for longer periods, many of the more visible components of development, including drill rigs, well completion equipment, and most of the surface disturbance is quickly removed and progressively reclaimed relative to the life of the well. Vehicle traffic is heaviest on the front end of development, and levels drop off significantly relatively quickly. Remaining equipment and infrastructure can be camouflaged and blended into the landscape.

Table 2.1, Action 3: BLM states that the total acreage for Visual Resource Management Classes (VRM) I, III, and IV to be relatively comparable. For VRM Class II, Alternative B contains significantly higher acreage, due to its inclusion of the proposed Carter Master Leasing Plan (MLP) as a Class II visual resource.

COMMENT: A review of the maps indicates that the alternatives are similar in their designations of VRM Classes I, II, III, and IV, with the exception of Alternative B's inclusion of the proposed Carter MLP as Class II. The EIS also indicates that there are two Plans of Development (PODs) proposed within the MLP. Other interest in the area may arise in the future. As a larger proportion of the visible equipment and infrastructure associated with oil and natural gas will not permanently remain, incorporating this area as a Class II visual resource will unnecessarily inhibit the ability of these two projects or any future interests to move forward. As none of the other alternatives include the proposed MLP within their inventories of Class II viewsheds, we urge BLM not to include this as a VRM Class II area in the Final EIS and ROD. The temporary nature of most of the oil and

natural gas development and infrastructure ought to be considered for other VRM Class II and III areas as well.

FISH AND WILDLIFE, SPECIAL STATUS SPECIES

The species habitat delineations in the RMP/DEIS are wholly inconsistent with those identified by the Montana Department of Fish, Wildlife & Parks (FWP). We ask BLM to explain these discrepancies in the final EIS, particularly due to the fact that the State manages most of the species for which habitat is identified. Such discrepancies are highly problematic for operators who work on both State and private lands that may be adjacent to BLM public lands because two separate processes could be required for the same project in circumstances where projects cross jurisdictional boundaries. We strongly recommend that BLM work closely with State agencies to eliminate the discrepancies in wildlife data and spatial representations utilized by BLM in the draft planning documents.

Chapter 2 – NSO Stipulations, Timing Limitations, and other Restrictions in Alternative B

COMMENT: The restrictions for surface-disturbing activities, NSO stipulations, and timing limitations for future oil and gas leasing with respect to several wildlife and plant species under Alternative B throughout Chapter 2 are unreasonable and unjustified. Incorporating any of the restrictions in Alternative B into the proposed alternative will unnecessarily preclude, prevent, and delay oil and gas development and other responsible multiple users from economic activities on millions of acres in the planning area.

RECOMMENDATION: BLM must not incorporate any recommended NSO stipulations from into the proposed alternative in the proposed DEIS.

Table 2-1 Fish & Wildlife, Aquatics

Pages 2-27/28, Alternative E, Action 5 - *"Surface disturbing and disruptive activities would be avoided in and within 0.25 miles of designated sport-fish reservoirs and would only be approved with design features to mitigate impacts to fishery resources and the user experience (3,800 acres). Oil and gas leasing would be offered with an NSO stipulation in and within 0.25 miles of designated sportfish reservoirs (4,000 acres)"*

COMMENT: BLM has provided no justification for the requirement of an NSO stipulation for future oil and gas leases within 0.25 miles of sport-fish reservoirs and has failed to adequately demonstrate how or why oil and gas development within 0.25 miles of reservoirs would negatively impact water quality or fisheries in Chapters 3 or 4. Historic BLM buffers for oil and gas development around stream and river channels and banks have been limited to 300 to 500 feet and have proven to be a reliable mitigation measure to protect fish and water resources. In addition, BLM would allow oil and gas leasing subject to a CSU stipulation within 300 feet of riparian and wetland areas (DEIS, p. 2-23/24). What is BLM's rationale for not utilizing the same 300 foot CSU buffer as applied to riparian and wetland areas?

BLM has not demonstrated that a 300 foot CSU buffer would not provide adequate protection to reservoirs. Therefore, we recommend that BLM revise this action in the FEIS to offer oil and gas leasing with a CSU stipulation in and within 300 feet of designated sportfish reservoirs.

Table 2-1 Pallid Sturgeon

Pages 2-39/40, Alternative E, Action 14 - *"Oil and gas leasing would be offered with a CSU stipulation. Prior to surface-disturbing or disruptive activities occurring in or within 0.5 miles of river or stream shorelines identified as pallid sturgeon habitat, a plan to maintain pallid sturgeon habitat would be prepared by the proponent and implemented upon approval by the AO (24,000 acres)".*

COMMENT: We have been unable to determine in the DEIS whether the recommended 0.5 mile CSU buffer has been suggested by the U.S. Fish & Wildlife Service or has been developed by BLM. Therefore, we are unable to determine if BLM has properly consulted with USFWS in the development and subsequent utilization of this stipulation. In addition, BLM has not mapped areas with pallid sturgeon habitat in the maps section of the DEIS. Moreover, BLM has not explained the increase in the need for habitat protection from NSO on 500 acres under Alternative A to CSU on 24,000 acres in Alternative E

BLM must disclose in the FEIS the scientific justification for the proposed CSU stipulation, either through a reference to a recommendation by USFWS or by some other justification. We also encourage BLM to regularly work and consult with the USFWS to determine if portions of the stipulated area are no longer critical to the pallid sturgeon and may be modified. BLM must also clearly identify and map pallid sturgeon habitat in the maps section of DEIS.

Table 2-1 Big Game Crucial Winter Range

Pages 2-39/40, Alternative E, Action 9 - *"Oil and gas leasing would be offered with a CSU stipulation within Big Game Crucial Winter Range areas (2,500,000 oil and gas acres)."*

COMMENT: While BLM provides ample opportunities for waivers and modifications to oil and gas stipulations in Big Game Crucial Winter Range areas, no exceptions will be provided in accordance with the Minerals Appendix, page MIN-43. If the operator provides credible information that their entire leasehold no longer contains crucial winter range for big game species, either through the lack of winter presence of big-game species or the absence of resource values that define winter range, BLM must provide a process that can be used by operators to seek have the ability to grant an exceptions to this stipulation and thereby exempt the operator from preparing a plan to maintain crucial winter range habitats capable of supporting the long-term populations of wintering big game.

We strongly encourage BLM to add exception criteria to address situations where it is determined that the leasehold no longer encompasses crucial winter range for big game species. We also remind BLM that CSU stipulations may not be imposed on valid existing leases simply because a plan amendment has been prepared. Legally, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease stipulations may not be applied to valid existing leases.

Table 2-1 Big Horn Sheep

Page 2-32, Alternative E, Action 12 - *"Oil and gas leasing would be offered with a CSU stipulation within Big Horn Sheep range."*

COMMENT: While BLM provides many opportunities for waivers and modifications to oil and gas stipulations in Big Game Crucial Winter Range areas, no exceptions have been provided according to page MIN-44 of the Minerals Appendix. Once again, if the operator is able to provide credible information that their leasehold no longer contains crucial winter range for Big Horn Sheep, either through the lack of winter presence of the species or the absence of resource values that define winter range, it is crucial for BLM to provide a process for operators to seek have the ability to grant an exceptions to this stipulation and thereby exempt the operator from preparing a plan to maintain bighorn sheep habitat will be prepared by the proponent and implemented upon approval by the AO..

We strongly encourage BLM to add exception criteria if it is determined that the entire leasehold no longer contains crucial winter range for Big Horn Sheep. We also remind BLM that any proposed CSU stipulations that may be applicable for future leases may not be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease stipulations may not legally be applied to valid existing leases.

Table 2-1 Prairie Falcons and Special Status Raptors

Page MIN-45, Appendix - *"Surface occupancy or use is subject to the following special operating constraints: activities will be allowed in and within 0.5 miles of raptor nest sites active within the past 7 years if the habitat can be maintained so that raptors are not precluded from using the nest site."*

COMMENT: What is the scientific justification for a nest considered to be "active" if it has been used in the past seven years? Without a clear explanation for the seven year "active" definition, this restriction is unreasonable and arbitrary. For example, if a nest was used six and half years prior to a proposed surface disturbance and has not been used since, it is reasonable to assume that the nest either has been abandoned or no longer contains the resource values to attract falcons or special status raptors. Yet, it will still be considered "active" by BLM and would trigger the stipulations and restrictions identified in Chapter 2, even though the nest may never be "active" again.

In addition, BLM has not identified which nests within the planning area have been active within the past seven years and it is unclear whether the burden to demonstrate that a nest has or has not been active falls on the operator or the BLM. In order to demonstrate that habitat can be maintained so that falcons or special status raptors are not precluded from using nest sites, operators must have a well-defined understanding of the location of active nests and adequate justification that they have been in fact active sometime in the recent past. In addition, BLM has

failed to map active or inactive nests for prairie falcons and special status raptors in the map section of the DEIS.

BLM must clearly explain and justify the methodology used to define a nest as "active" in order to use the seven-year timeline in surface use restrictions and CSU stipulations for future oil and gas leases. If BLM ultimately decides that the standard by which a nest will be considered "active" is use within the last seven years or some other period of time, the agency must explicitly state that nest sites that have been inactive within the past seven years or some other period of time will not be subject to the surface disturbing and disruptive activities and lease stipulations identified in Chapter 2. BLM must also clearly identify and map Prairie Falcon and Special Status Raptor active and inactive nests in the proposed final EIS.

We also remind BLM that any CSU stipulations for prairie falcons and special status raptors that may be applicable for future leases may not be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms may not be consistent with valid existing lease rights.

Table 2-1 Interior Least Tern

Page 2-37, Alternative E, Action 8 - "Surface disturbing and disruptive activities would be avoided in and within 0.25 miles of interior least tern habitat (9,300 BLM administered surface acres and 73,000 BLM administered mineral acres). Oil and gas leasing would be offered with an NSO stipulation in and within 0.25 miles of interior least tern habitat".

COMMENT: We are puzzled why the Piping Plover and the Interior Least Tern, both listed as endangered under the ESA, will receive different levels of protection in the RMP. Specifically, BLM has failed to demonstrate why surface disturbing and disruptive activities will be avoided and future oil and gas leases will be offered with NSO stipulations within 0.25 miles of Interior Least Tern habitat, while surface disturbing and disruptive activities will be allowed and oil and gas leases will be offered with CSU stipulations with 0.25 miles of Piping Plover habitat. This discrepancy has not been justified in Chapters 3 or 4 by any reference to guidance from the USFWS. If BLM wishes to pursue more restrictive management requirements for the Interior Least Tern, it must clearly demonstrate that those requirements are consistent with USFWS recommended protection measures for the species.

In addition, BLM has not provided maps which identify Interior Least Tern and Piping Plover habitat. Management restrictions for the Interior Least Tern should be consistent with those for the Piping Plover unless BLM can cite recommended guidance from USFWS that justifies the more restrictive management prescriptions for Interior Least Tern in the DEIS. In addition, BLM must clearly identify and map Interior Least Tern and Piping Plover habitat in the maps section of the final EIS.

RIGHTS-OF-WAY

Page 2-122, Alternative E, Action 9 – *"ROWs and other realty- related land use authorizations... would be avoided on approximately 1,300,000 BLM-administered surface acres (45%); excluded on approximately 16,000 BLM-administered surface acres (less than 1%); and allowed on the remaining 1,500,000 (55%) BLM-administered surface acres in the planning area. See Map 40 for ROW Exclude and Avoid areas under this alternative."*

Page 3-359, Alternative E – *"Avoiding ROWs...on approximately 2.2 million acres of BLM-administered acres in the planning area (80 percent) would increase the cost and time of proposed projects, reduce ROW and other land use authorization opportunities available for proposed projects in the planning area, or, in some cases, cause denial of the project (Table 4-136)"*

COMMENT: BLM is inconsistent when describing how much acreage it would require to be avoided for ROW activities and must provide the correct figure. However, regardless of how much acreage BLM intends to designate as ROW avoidance, both figures are excessive Moreover, the DEIS fails to provide adequate discussion, documentation or justification for the proposed prohibitions of ROW on immense portions of the planning area. This information is a key requirement of NEPA and its omission constitutes flaw in the analysis because it fails to consider the impacts such a decision would have on future oil and gas development, transportation, along with other activities which require ROW.

Additionally, the DEIS indicates in Appendix GLO-3, that proposed ROW must be *"compatible with the purpose for which the area was designated"* and *"not otherwise feasible on lands outside the avoidance area."* However, these statements are unacceptably vague and do not specify any standards by which such determinations will be made. We strongly recommend that BLM provide specific guidance that takes into account the short-term nature of construction disturbance and the minimal residual criteria associated with pipeline ROWs along with an analysis and full consideration of the economic impact of requiring an operator to move a route to an area outside an avoidance area.

BEST MANAGEMENT PRACTICES (BMP)

GENERAL

BLM fails to distinguish between what constitutes a BMP, Mitigation Guidelines, even what constitutes a regulatory requirement. As described on BLM's national webpage (BMPs) are described as *"state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner."* Typically, BMPs are utilized by industry to provide added protections in areas where such measures are technically and economically feasible. Conversely, the DEIS states in the BMP Appendix that *"Mitigation Guidelines are a compilation of practices employed by the Bureau of Land Management (BLM) to mitigate impacts from various activities (e.g., operations stipulations, conditions of approval [COAs]). They apply to activities such as road or pipeline construction, range improvements, and permitted recreation activities."* In addition to the fact that not all of these

identified measures would be achievable or even appropriate mitigation in all cases, BLM has failed to acknowledge that in accordance with valid existing lease rights, many of the identified measures in the Appendix would abrogate such rights. Therefore, it is crucial for BLM to acknowledge it may be impossible to impose all these measures on every project, many of which would be inappropriate. We also strongly recommend that BLM clarify which of the measures are BMPs, which are to be used as COAs on drilling permits, and which are BLM identified mitigation measures, AND the circumstances which justify their use. Moreover, we strongly object to the inclusion of this Appendix in the final EIS unless BLM makes changes to ensure that valid existing rights are recognized and protected.

Page 2 - Item 3 *"the total disturbance area would be kept to a minimum and located in an area that would reduce environmental impacts as much as possible. Surface disturbances would be co-located where feasible; and sites would be located using existing roads and previously disturbed sites unless it would cause or aggravate an erosion problem. All linear facilities would be located in the same trenches (or immediately parallel to) and placed during the same period"*

COMMENT: While we understand the need to co-locate facilities, reasons other than erosion may make this infeasible. For example, different operators on adjoining leases may be unable to co-locate facilities due to different safety, operating practices or timing requirements, e.g., sweet gas and sour liquids. In addition, on split estate lands, surface owners may not be agreeable to co-locating facilities due to conflicts with their use of their land. We recommend this sentence be changed to read, *"....Surface disturbances would be co-located when safety will not be compromised, it is technically feasible and meets the preferences of the private surface owner."*

Page 2 – Item 3(b) *"plans of development would be required for renewable energy and minerals development (e.g., oil, gas, and coal). Such plans would include the use of centralized collection facilities"*

COMMENT: Please explain the context in which the term "Plan of Development" being used. Plans of Development can be an annual report required for a federal unit or it can mean a plan of development associated with an APD or multiple APD's. It has not been BLM's practice to require this amount of detail for an annual Plan of Development Associated with a federal unit. Therefore, we recommend that a phrase for development associated with an APD or multiple APD's be inserted for clarification.

Page 2 - Item 3(f) *"directional drilling, drilling multiple wells from the same pad, co-mingling, recompletion, or the use of existing well pads would be employed to minimize surface impacts from oil and gas development"*

COMMENT: We recognize the benefits of pad drilling and the use of existing pads to reduce the surface footprint of oil and gas activities. However, it must be noted that the "would" implies shall and that will not be possible in all cases. Shallower formations may not be conducive to directional or pad drilling. There could be downhole geologic constraints that do not allow an existing pad to be used or even pad drilling. Therefore, we recommend that the following phrase be added to this statement, "to the extent technically and economically feasible."

Page 2 – Item 3(i) *"remote telemetry would be used to reduce vehicle traffic (e.g., monitoring oil and gas operations)"*

COMMENT: While we understand why BLM believes this is a good practice; however, this technology may not be feasible for smaller operators due to the limited economic conditions associated with lower performing wells. We recommend that the following phrase be added to the end of this sentence, *"....unless the operator can demonstrate it is not economically feasible."*

Page 2 - Item 3(l) *"Interim and final reclamation would begin within 25 days of the disturbance. Interim reclamation would be completed to within a few feet of facilities."*

COMMENT: First, BLM has failed to recognize that the interim and final reclamation processes are not the same thing. Second, BLM must recognize that it may be literally impossible for numerous reasons for any type of reclamation activities, interim or final, to begin within 25 days of initial disturbance; well completion schedules, weather, soil or any number of other conditions may be controlling factors. Frankly, this schedule would be next to impossible even for linear projects. For oil and gas sites and facilities it is not even remotely possible. As stated by BLM, this approach would require reclamation to begin while drilling and/or completion activities are still ongoing. Reclamation procedures are logistically impossible with all the equipment on site during drilling or completion. Interim reclamation cannot begin until well testing is completed and production equipment is installed on the well pad, including flowlines, which could take months before drilling, completion and the wellsite equipment is installed. Having vegetation within 3 feet of a separator is a safety and fire hazard and needs to be reassessed by the MCFO and operators to determine the most appropriate set-back. Finally, the timeframe for beginning any type of reclamation must be changed to allow reclamation to begin within 6 months after production begins.

Page 2 - Item 3(m) *"For surface-disturbances, a mitigation monitoring and reporting strategy would be developed and implemented (see the Reclamation Appendix for further guidance)"*

COMMENT: We dispute the need to require an extensive plan to be written as outlined in the Reclamation Appendix. It is unreasonable for this requirement to extend to a small discreet surface disturbance, such as for maintenance on a small area which had been reclaimed, small pipeline repairs or small temporary construction projects. In such instances, using previously existing reclamation procedures would be appropriate. In some cases which involve larger disturbances, BLM needs to allow the project proponent to utilize pre-existing plans which are still current.

Page 2 – Item 3(d) *"Pitless or aboveground close-loop drilling technology would be used. Recycle drilling mud and completion fluids. Fluids, drilling mud, and cuttings would be disposed of in approved disposal areas (e.g., landfills)"*

COMMENT: While many companies use pitless/closed-loop drilling technology, BLM must realize that some rigs are not equipped for this practice. This would be particularly true of smaller rigs used for shallow formation development. Therefore, mandating closed systems is unacceptable for all projects. Further, we recommend that the requirement that fluids, drilling mud and cuttings must be disposed of in landfills be carefully reassessed. If the content of fluids, muds and cuttings are not an environmental concern, why shouldn't those constituents be managed onsite? There still

exists in the Resource Conservation and Recovery Act (RCRA) an exemption for drilling wastes as defined in the law and in EPA guidance. We see no need to haul benign material to landfills which will increase traffic on the road and present a safety risk and a hazard to wildlife. It is recommended that the term "would" be substituted with "may" and that only under certain circumstances would cuttings, fluids and mud be hauled offsite for disposal, such as when there is a question of applicability of the RCRA exemption.

Page 4 – Item 6(a) *"Impacts to air resources, air quality related issues, and atmospheric greenhouse gas (GHG) concentrations would be reduced..."*

- *"Restricting the extent of surface impacts during construction activities and ongoing operations by using directional drilling to reduce the number of well pads"*

COMMENT: While industry has generally increased its use of pad drilling, directional drilling is not always possible. In particular, BLM must recognize that it may be impossible to produce a well using a high angle wellbore in shallow formations. We recommend that this item be revised to add "... *when geologic and engineering considerations are compatible with the objective formation".*

- *"Using two-track primitive roads whenever possible rather than developing a dirt road"*

COMMENT: BLM needs to recognize that primitive two-track roads maybe useable in certain cases, but certain activities require that surfacing be used for the type of traffic anticipated (such as heavy vehicular traffic) and for seasonal use. We recommend this item be modified to add *"using two-track primitive roads whenever possible and is compatible with anticipated traffic loads associated with the intended use..."*

<u>Page 4 – BMP Item 6(b)</u> *"Fugitive dust and vehicle exhaust emissions would be reduced by restricting vehicle trips by..."*

- *"Developing centralized liquid collection (water, produced water, and fracturing liquid) facilities and production (treatment and product storage) facilities to reduce the number and average distance of vehicle trips"*

COMMENT: This requirement must be qualified to recognize that such a practice would only be viable depending upon the economic feasibility of each individual project. Therefore, we recommend that the phrase "if economically and technically viable" be inserted into this item.

<u>Page 4 – BMP Items 6 (c) and (d)</u>

COMMENT: As discussed in our comments regarding air quality, it is clearly outside BLM's authority to attempt to mandate emission control strategies such as nonselective catalytic reduction or other program elements currently under the authority of the MDEQ and EPA. The agency must work with the MDEQ to coordinate any type of emission control strategy. Therefore, we have chosen not to respond to BLM's so-call BMPs and defer to, and incorporate by reference, the MDEQ's comments regarding its concerns with BLM's proposed air quality controls.

WATERBODY-CROSSING GUIDELINES

Page 4 – Item 3 *"Site reclamation measures would be initiated as soon as a particular area is no longer needed for construction"*

COMMENT: As discussed previously in these comments, this requirement may be impossible to meet for a variety of reasons and needs to be modified.

GREATER SAGE-GROUSE

We have included a separate section of comments regarding the Greater Sage-grouse following these comments on the BMP section. However, in addition to those comments, we have made observations and recommendations regarding the BLM's proposed management of the species in this section. One important point the DEIS fails to acknowledge is that many of the requirements, procedures or management practices put forth may not be applicable due to valid existing lease rights held by lessees. We urge BLM to acknowledge this limitation in the ROD.

Page 28 - ***"Noise can disrupt breeding rituals and cause abandonment of leks".***

COMMENT: A lek cannot be abandoned unless it is "active." We recommend that BLM **rephrase** the term of "leks" to read "active leks" for both of the bullet points included under the above heading. Moreover, we recommend that BLM clarify how it classifies a lek as "active."

NESTING HABITAT

Page 37 – *"A 1-day notice prior to any planned activity during March 1 through June 15 would be required so that the impacted areas and any undeveloped areas can be nest-dragged to determine the presence or absence of active nests. A second nest-drag survey would be required if activity begins more than 2 days after completion of pad construction."*

COMMENT: This requirement is too vague – what type of "planned activity" triggers these requirements? Is it any surface disturbance or specific operations? We recommend that BLM clarify its intent and describe the situations in which this requirement would apply.

BEST MANAGEMENT PRACTICES FOR FLUID MINERAL DEVELOPMENT

Page 41 – *Density and Amount of Disturbance*

- *If the lease is partially or entirely within priority habitat areas: Subject to topographic and other environmental constraints, require any development within priority habitat to be placed in the area least harmful to sage-grouse based on vegetation, topography, or other habitat features.*

COMMENT: There are more than simply topographic or environmental constraints that must be involved in determining the location of a well or production facilities. The primary objectives are to economically find and produce oil or natural gas so and the well and facility site locations are very important aspects of this endeavor. As such, BLM must acknowledge that well pads and facility sites are designed and constructed to be economic while attaining specific geological targets. MBOG spacing orders must also be met. We strongly recommend that the above-stated qualifiers be added to this item.

- *"Within the Density and Amount of Disturbance category, the statement is made "To the extent possible and consistent with valid existing rights, limit disturbances to an average of one site per 640 acres on average, with no more than 3 percent direct surface disturbance in the analysis area."*

- *"NEPA analysis would disclose the impact of the addition to the surface disturbance total for the local population within the priority sage-grouse habitat. If that analysis shows anthropogenic disturbance crossing or above 3 percent for that area, then the analysis will include expected level of activity, types of use, and if there are expected population impacts will make demonstrate how additional, effective mitigation necessary will offset the resulting loss of sage-grouse habitat and population impacts."*

COMMENT: Wyoming has been effectively using the 5 percent factor with extensive experience. Upon what scientific evidence is this 3 percent disturbance factor based?

Page 42 - *"Require a 1-day notice prior to any planned activity from March 1 through June 15 so that the pad site and any undeveloped access route or pipeline can be nest-dragged to determine the presence or absence of active nests. Require a second nest-drag survey if drilling activity begins more than 2 days after completion of pad construction."*

COMMENT: As previously mentioned, BLM needs to define what constitutes "planned activity." Second, please define the term "nest dragged."

Page 42 – *"Avoid sagebrush, but if disturbance is necessary, interim reclamation should include sage plantings or seedings or the use of minimum disturbance practices to protect sage on well pads and pipelines."*

COMMENT: We recommend the following qualifying statement be included, *"following well documented procedures for attempting to re-establish sage plantings should be considered."* Additionally, when split-estate lands are involved, BLM needs to consider the needs of the surface owner in determining whether to require re-establishment of sagebrush.

SAGE-GROUSE HABITAT – PROTECTION PRIORITY AND RESTORATION AREAS

Page 43 - *"Locate new compressor stations outside priority habitats and design them to reduce noise that may be directed towards priority habitat."*

COMMENT: It is crucial for the phrase *"to the extent technically feasible"* to be inserted at the beginning of this sentence. Compressor stations are carefully sited to optimize gas gathering taking into account a number of technical factors.

OPERATIONS

Page 44 - **"***Cluster disturbances, operations (fracture stimulation, liquids gathering, and other disturbances), and facilities".*

COMMENT: Clustering disturbances may not be possible due to surface disturbance limitations, landowner preferences and safety considerations. While clustering may make sense in certain situations, it is simply not achievable in every case. We recommend inserting *"to the extent possible"* to the beginning of this item.

Page 44 - ***"Use directional and horizontal drilling to reduce surface disturbance".***

COMMENT: As previously explained, directional and horizontal drilling is not technically feasible in all cases. This requirement must be revised to take such limitations into account.

Page 44 - ***"Apply a phased development approach with concurrent reclamation."***

COMMENT: If the term "phased development" means limiting well development and the life of wells through production before moving into new areas, this is not feasible due to federal lease terms along with other legal requirements. We strongly recommend that BLM delete any references to "phased development." in the final EIS and RMP.

Page 44 - *"Bury distribution power lines"*

COMMENT: This requirement is ill-conceived because it does not take into account safety, technologically-based logistics or project economics.

Page 44 - *"Cover (e.g., fine mesh netting or use other effective techniques) all drilling and production pits and tanks regardless of size to reduce sage-grouse mortality".*

COMMENT: It is virtually impossible to install fine mesh netting over larger pits. BLM must acknowledge that wind and snow considerably compromise the netting and that maintaining this type of netting in such situations is characteristically impossible. Therefore, the reference to drilling pits and evaporation ponds should be eliminated from this item.

Page 44 - *"Use only closed-loop systems for drilling operations and no reserve pits".*

COMMENT: As previously pointed out in these comments, it is imprudent for BLM to attempt to require only closed loop systems since not all drilling rigs are equipped with this feature.

Page 44 - *"Limit noise to less than 10 decibels above ambient measures (20 to 24 dBA) at sunrise at the perimeter of a lek during active lek season".*

COMMENT: This requirement is completely inconsistent with the previous background of 39 dBA background plus the 10 decibel threshold. There is no peer reviewed data that supports a background at dawn for a 20-24 background level. BLM needs to remove this item from the final EIS/RMP and replace it with the 39 dBA which is currently in use when assessing noise considerations in sage grouse habitat.

Page 44 - *"Require noise shields when drilling during the lek, nesting, brood-rearing, or wintering season."*

COMMENT: It is ambiguous with respect to what BLM believes constitutes a "noise shield". If this refers to a "noise wall," there are any number of safety and engineering design features which could limit industry's ability to install this type of wall, particularly during drilling. Further, there are no criteria regarding the distance to a lek when this would be required. This item should be removed from the final EIS/RMP.

GREATER SAGE-GROUSE

The NTT Report is not supported by the Western Association of Fish and Wildlife Agencies (WAFWA) as BLM's sole source of Sage-grouse management direction. In a letter sent to the Interior Secretary on May 16, 2013 WAFWA member states made it clear that they never endorsed the sole use of the NTT or any other scientific publication. Rather, they believe that a variety of peer-reviewed publications which collectively provide the best available science for sage-grouse should have been used by BLM as the basis for conserving the Sage-grouse, thereby avoiding a listing under the Endangered Species Act (ESA). They went on to recommend that management and regulatory mechanisms should be based upon the best available science which would provide the best strategy for near- and long-term management of sage-grouse and provides the best opportunity for precluding the need to list the species under the ESA.

Additionally, the Northwest Mining Association (NWMA) recently published a report *"BLM's NTT Report: Best Available Science or a Tool to Support a Pre-Determined Outcome?"* alleging that BLM failed to use best available science, ignored existing regulatory tools and adopted a pre-decisional Greater Sage-Grouse Conservation Policy. We share this view. The NWMA report questions the appropriateness of the NTT Report, because the USFWS' "warranted-but precluded" determination was based upon the conservation measures already contained in BLM Manual 6840 - Special Status Species Management. Moreover, the USFWS concluded that BLM needed to properly and consistently implement Manual 6840 in its Resource Management Plans and provide sufficient monitoring data to demonstrate the effectiveness of the resulting conservation measures.

Another major fundamental concern the signatories to this letter raise is the inherent flaw in BLM's basic assumptions, due in part to the flawed recommendations contained in the NTT report, which fail to recognize that the level of disturbance associated with a well is not constant throughout its life. The highest level of surface disturbance associated with oil and gas development occurs during

the construction, drilling and completion phases, which can last as little as a day or two up to a few months, depending upon the time it takes to complete the well. Once production ensues, these activities subside dramatically and only regular monitoring and maintenance of the well are required. Shortly after well completion, the operator normally begins interim reclamation to partially restore any impacted habitat. This partial reclamation will remain in effect until the well has been depleted. Upon conclusion of production activity, the operator will then move forward with plugging and abandonment procedures, which also includes final reclamation that will ultimately result in full restoration of the site and its return to productive habitat.

Given the above concerns, we object to the management and mitigation proposals contained in the DEIS because they demonstrate a plain lack of understanding of how the federal oil and gas program works as evidenced by ill-conceived measures that either impossible to implement or are unduly restrictive.

Another concern relates to the broad inconsistencies exhibited in selected management options for Sage-grouse habitat on public lands within the State of Montana. For example, how was the MCFO NSO stipulation of 2 miles around leks determined? By comparison, the HiLine DEIS provides for a 1-mile buffer around leks in general habitat. The differing buffers around leks between the HiLine and MCFO planning areas raises questions concerning how these values were determined and the scientific basis that caused each DEIS to arrive at different conclusions (proposed stipulations). Both planning areas are part of Sage-grouse Management Zone 1 and both DEIS documents cite virtually the same sources of data as justification for their individual (differing) conclusions. Are sage-grouse populations, habitat, and projections of impacts from energy development substantially different in the two BLM planning areas? Please explain the basis or scientific rationale that would justify discrepancies among the stipulations proposed as part of various DEIS documents currently available for public comment in Montana (i.e., MCFO, HiLine, Billings/Pompey's Pillar) when referenced data sources are generally the same.

Well-pad densities are cited in Chapters 3 and 4 as having an effect on sage-grouse and sage-grouse habitat. However, BLM has failed to provide an estimate of well-pad densities in general sage-grouse habitat within the preferred alternative (Alternative E). What are the well-pad densities assumed for the alternatives?

Under Alternative E, a CSU stipulation would be included for oil and gas leases in the Sage-Grouse Restoration Area. How would these stipulations be developed and what factors would be evaluated in determining the stipulations?

CHAPTER 2 - ALTERNATIVES

Page 2-10, Alternative B - *Even after avoiding and minimizing impacts, projects that will cause adverse impacts to resources typically require some type of compensatory mitigation. Compensatory mitigation refers to restoration, establishment, enhancement, or, in certain circumstances, preservation of resources for the purpose of offsetting unavoidable adverse impacts. The BLM will determine the appropriate form of compensatory mitigation required. Methods of compensatory mitigation include restoration, establishment, enhancement and preservation.*

COMMENT: On a project-by-project basis, how would BLM determine the appropriate form and amount of compensatory mitigation required for sage-grouse and their habitat that would be consistent with lease rights? Further, baseline conditions must be compared for each project with post-project conditions to determine actual, long-term impacts to sage-grouse. Some research has indicated that impacts to sage-grouse from a project may not be discernible until several years after project operation. Presumably, some form of monitoring would be needed to determine effects. Would monitoring be based on lek counts? If so, what mitigation measures have been shown to influence population levels based on lek counts (assuming leks reflect population levels)? If habitat losses are to be compensated, how will habitat functionality be assessed to determine losses or degradation from a project and adequate compensation for losses or degradation?

Establishment (creation) is listed as an option for compensatory mitigation. It may not be practicable to create sagebrush habitats where they do not currently exist. How would the functionality of such created habitats be evaluated for sage-grouse use and habitat value?

These measures appear to be based on the model established by the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency for wetland mitigation. To support wetland mitigation, numerous specific regulatory documents, scientific papers, and lawsuits have resulted in a complex and arcane functional assessment and mitigation methodology. The same complexity and need for specific policies and guidance would be required before any type of compensatory mitigation policy for sage-grouse and other sensitive species could be implemented. At what point in the RMP process will specific information be developed to guide assessments of habitat functionality, monitoring, and compensatory mitigation for sage-grouse and other sensitive species?

Table 2-1

COMMENT: As presented, the table is confusing and difficult to interpret in that it identifies actions which are attributed to each alternative but it does not appear that there is a complete accounting of all of the management actions that would be implemented for each alternative.

For example on Page 2-58, *Sage-Grouse Habitat Compensation (compensation would be for Sage-Grouse Habitat-General Habitat Areas, Protection Priority Areas, and Restoration Areas*); Alternative E, indicates that "*Habitat compensation would not be required*" for Action 1. However, Action 1 under *Management Common to All Alternatives* on Page 2-55 states: "*Where deemed effective, water developments would be managed to reduce the spread of West Nile virus (see Best Management Practices [BMPs] identified in the Fish and Wildlife Appendix)*".

Also, it does not appear that Action 1 is correctly addressed for Alternative B and C (see Page 2-58). Action 1 is described in the table as: *"For surface-disturbing activities that did not improve sage-grouse habitat, habitat compensation would be required"*. This description does not relate to West Nile Virus, but to general surface-disturbing activities in all levels of sage-grouse habitat.

We recommend revising Table 2-1 so that it clearly lists the proposed management actions specified for oil and gas leasing and development in the categories of sage-grouse habitat for the preferred alternative.

CHAPTER 3 - AFFECTED ENVIRONMENT

Page 3-2 - *This section contains a description of the existing biological and physical resources of the MCFO planning area.*

COMMENT: Throughout the Affected Environment discussion regarding sage-grouse, much of the information presented is based on studies of Sage Grouse Management Zone 1, which includes northeastern Wyoming and far western North and South Dakota. This broader scale may or may not be directly applicable to the MCFO planning area. It is crucial for the discussion to be refined to the MCFO planning area consistent with the direction provided on Page 3-2. Individual comments along this same vein are made below reflecting this concern as it applies to specific topics. Although analysis of Management Zone 1 would be appropriate as a study area for analysis of cumulative impacts to sage-grouse (see comments directed to Page 4-163 below), potential direct and indirect impacts to sage-grouse and sage-grouse habitat resulting from the RMP would more appropriately only address conditions and potential direct and indirect impacts within the MCFO planning area.

Page 3-73 – *"In cooperation with MFWP, the University of Montana, and Adopt-A-Lek Program, the BLM is working toward gaining a better understanding of the genetic connectivity of groups of sage-grouse across their Montana range. Genetic testing from feather samples can be used to determine consanguinity or birds within and between lek complexes or designated core habitats."*

COMMENT: Please clarify whether (how) consanguinity affects management direction addressed in this DEIS. The Montana Sage Grouse Working Group (2005) indicates that Montana sage-grouse are representative of one population with good genetic diversity.

Page 3-74 – *"The BLM is an active participant in the Montana Sage Grouse Work Group, a cooperative membership of state, federal, tribal, and private entities and several individuals from the general public that developed the statewide plan."*

COMMENT: Under Executive Order No. 2-2013, Montana Governor Bullock mandated the establishment of a Greater Sage-grouse Habitat Conservation Advisory Council with the stated purpose *"to gather information, furnish advice, and provide to the Governor recommendations on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the Endangered Species Act (ESA), by no later than January 31, 2014."* Will this advisory council supplant the Montana Sage Grouse Work Group or will both groups continue to address sage-grouse management? In addition, please clarify BLM's anticipated role in recognizing and/or adopting recommendations of the advisory council as part of revisions to the DEIS.

Page 3-74 – *"Sage-grouse populations decline by 2 percent annually (Connelly, Knick, Schroeder, Stiver, WAFWA 2004)."*

COMMENT: Does this statement refer to populations throughout the range of the sage-grouse? Several statements in the DEIS and in reference literature appear to contradict information presented above. For instance, in the same paragraph (Page 3-74), in reference to Montana specifically, the text indicates: *"The total number of males in these trend areas peaked in 2006 with 988 males. The number of males counted on trend areas declined from 2007 to 2009 but increased in 2010. The overall trend for sage-grouse in trend areas is stable (Beyer et al 2010)."*

In addition, the following statement (attributed to Beyer et al [2010]) on page 4-162 also appears to conflict with the above information: *"Sage-grouse lek counts are used to monitor sage-grouse populations and trends and ideally are counted multiple times over the course of the breeding season. However, a lack of data outside of the PRB area of Montana and insufficient population data throughout the planning area has resulted in a lack of information about specific population trends."*

The Montana Sage Grouse Work Group (2005) also states, *"Recent genetic analysis (Oyler-McCance et al 2001) indicates that Montana sage-grouse are representative of a single population with good genetic diversity (broad-scale assessment."*

Given the inconsistencies of the above statements, please clarify whether the DEIS assumes that the overall trend for sage-grouse in the MCFO planning area is stable. If not, how do population trends differ over the planning area? Are there different populations of sage-grouse in the planning area? What information sources / studies will be used to appropriately document trends on the MCFO planning area-level?

Page 3-74 – *"In portions of Sage-Grouse Management Zone 1, sage-grouse populations have declined through wholesale loss of habitat and through impacts of disturbance and direct mortality to birds on the remaining habitat."*

COMMENT: What is BLM's source (citation) for this information and please clarify which portions of Sage-Grouse Management Zone 1 and/or which parts of the MCFO planning area to which this statement applies? What sources of direct mortality in the MCFO planning area (or outside of the planning area) have caused declines in sage-grouse populations? At the population level, it is very difficult to ascribe population declines to direct mortality unless it attributable to predation. Moreover, populations are cyclic and influenced by many factors including weather.

Page 3-76 – *"The distribution and influence of multiple land uses such as energy development, ROWs, and livestock grazing varies across sage-grouse distribution (Knick et al 2003) throughout the planning area."*

The above comment, attributed to Knick et al (2003), does not specifically address the MCFO planning area. Rather, this report is a general discussion of birds associated with general sagebrush habitats. Overall, the draft DEIS discussion regarding the influence of these factors on sage-grouse specifically within the MCFO planning area is remarkably vague. Most of the discussion hinges on information gathered on a broader scale, which clearly do not have direct applicability to the MCFO

planning area. We recommend that BLM clarify the above assertion and provide a more robust discussion of the MCFO planning area specifically.

Page 3-74 – *"The most pervasive and extensive change in to sage-brush ecosystems in Sage-Grouse Management Zone 1 is the conversion of nearly 60 percent of native habitats to agriculture (Samson et al 2004)."*

COMMENT: The publication of Samson et al (2004) does not address sagebrush ecosystems in Sage-Grouse Management Zone 1. This paper addresses prairie grasslands in the Great Plains, which represents a much larger area. Samson et al (2004) also does not differentiate between prairie grasslands and sagebrush steppe.

It is necessary for BLM to present specific information on the amount of sagebrush habitat that has been converted to agricultural uses within the MCFO planning area. The DEIS seems to equate Sage-Grouse Management Zone 1 with the MCFO planning area, but does not present a rationale for how Management Zone 1 is similar or dissimilar to the planning area. Please clarify.

Page 3-74 – *"The planning strategy will evaluate the adequacy of BLM RMPs and address, as necessary, revisions and amendments throughout the range of the greater sage-grouse in North America, which has been divided into seven sage-grouse management zones based on populations within floristic provinces (Stiver et al 2006)."*

COMMENT: *Stiver et al* (2006) does not address management zones based on floristic provinces. The map of the Management Zones on page 3-75 (Figure 3-9) is attributed to Knick and Connelly (2011). Knick and Connelly (2011) which states: *"The Western Association of Fish and Wildlife Agencies defined seven Sage-Grouse Management Zones for assessing population and habitat trends independent of administrative and jurisdictional boundaries. Management zones were originally delineated from floristic provinces, within which similar environmental factors influence vegetation communities (West 1983b, Miller and Eddleman 2001). Boundaries of management zones subsequently have been redefined particularly in Montana and Wyoming to better reflect linkages among populations and to include known leks outside the original zones (S.J. Stiver, pers. Comm.)."*

Page 3-75 – *"In Sage-Grouse Management Zone 1, greater sage-grouse were historically a function of the interaction of physical factors (e.g., climate, soils, geology, and elevation) and natural disturbance factors (e.g., fire, grazing and drought) that allow sagebrush to persist on the landscape."*

COMMENT: How does the historical condition differ from the existing condition for sagebrush to persist on landscape? These same factors still influence the persistence of sagebrush and sage-grouse today.

Page 3-76 – *"Throughout Sage-Grouse Management Zone 1, land ownership is predominantly private (70 percent). Ownership on the remaining range of the greater sage-grouse in Sage-Grouse Management Zone 1 is 68 percent private and 13 percent state or other federal ownership (not*

including the Fort Peck and Fort Belknap Indian Reservations), with 83 percent of the federal lands in the range of the greater sage-grouse in Management Zone 1 managed by the BLM."

COMMENT: This statement is unclear. Does this mean that 83 percent of the 13 percent of federal ownership in Management Zone 1 is within the remaining range of the greater sage-grouse?

Page 3-76 – *"Individual species have different thresholds of fragmentation tolerance; greater sage-grouse have large spatial requirements and eventually disappear from landscapes that no longer contain large patches of habitat while smaller birds like Sprague's pipit can persist in landscapes with smaller patches of habitat because their spatial requirements are smaller."*

COMMENT: The source of the information (citation) regarding patch size thresholds for sage-grouse is not provided. This concept has important management implications and patch size thresholds for sage-grouse need to be identified so that fragmentation impacts can be avoided.

Page 3-77 – *"In Sage Grouse Management Zone 1, the remaining sagebrush habitats are mostly managed as grazing lands for domestic livestock. Domestic livestock function as a keystone species in the management zone through grazing and management actions related to grazing."*

COMMENT: Page 4-160 of the states *"Determining season-of-use and livestock numbers for grazing permits on a case-by-case basis would not necessarily result in high quality sage-grouse habitat. The reduction in grass height caused by livestock grazing in sage-grouse nesting and brood-rearing areas has been shown to negatively impact nesting success when residual herbaceous cover was reduced below approximately 7 inches needed for predator avoidance (Gregg et al 1994). Livestock grazing would potentially reduce suitability of breeding and brood-rearing habitat, which would impact sage-grouse populations (USFWS 2010a)."*

While grazing has the potential to affect sage-grouse habitat; the DEIS fails to describe how sage-grouse habitat and displacement of sage-grouse have been affected by grazing practices in the MCFO planning area. What studies have been done to distinguish between impacts to sage-grouse and habitat from grazing as compared to energy development? What is the range condition of sage-grouse habitats within the MCFO planning area? Identifying impacts from grazing versus impacts from energy development is important for developing appropriate avoidance and mitigation measures associated with hydrocarbon development. *BLM Instruction Memorandum MT-1010-017* directs that management for Sage-Grouse Habitat Protection Priority Areas results in population trends that follow the same magnitude of declines or increases as compared to sage-grouse trend areas within the planning area. The Memorandum states that *"trend leks" would be within the same geographic area, but without human impacts to serve as a baseline"*. The Memorandum does not indicate if trend areas would be affected by livestock grazing. This is an important variable that needs to be considered when establishing reference leks and interpreting results from lek counts.

Page 3-79 – *"Greater sage-grouse and other sagebrush-obligate species are experiencing a "death by a thousand cuts" scenario".*

COMMENT: Metaphors such as *"death by a thousand cuts"* are grossly inappropriate and irresponsible as they can be variously interpreted. Statements such as this elicit emotional responses and foster subjective interpretations concerning *"death"* and *"a thousand cuts"*. The narrative in the DEIS should strive to be objective and scientific. We strongly recommend this sentence be eliminated.

Page 3-79 – *"Several studies have shown that breeding sage-grouse populations have been severely affected at oil and gas well densities commonly permitted in Montana and Wyoming (Naugle, Doherty, Walker, Holloran, and Tack 2011)."*

COMMENT: Ramey et al (2011) report that *"Current stipulations and regulations for oil and gas development in sage-grouse habitat are largely based on studies from the Jonah Gas Field and Pinedale Anticline. These and other intensive developments were permitted decades ago, using older, more invasive technologies and methods. The density of wells is high, due to the previous practice of drilling many vertical wells to tap the resource (before the use of directional and horizontal drilling of multiple wells from a single surface location became widespread), and prior to concerns over sage-grouse conservation. These fields and their effect on sage-grouse are not necessarily representative of sage-grouse responses to less-intensive energy development. Recent environmental regulations and newer technologies have lessened effects to sage-grouse."*

Taylor et al (2007) analyzed six oil and gas development areas in Wyoming with various degrees and ages of activity to determine sage-grouse population trends relative to intensity and timing of oil and gas development. They report that:

- *Sage-grouse population trends are consistent among populations regardless of the scope or age of energy development fields, and that population trends in the six development areas mirror trends state-wide;*
- *Application of the BLM standard sage-grouse stipulations appear to be effective in reducing the impact of oil and gas development on male-lek attendance;*
- *Male lek attendance in areas that are not impacted by oil and gas development is generally better than areas that are impacted;*
- *Displacement from impacted leks to non-impacted leks may be occurring; research is needed to assess displacement and its implications for developing sage-grouse conservation strategies;*
- *Lek abandonment was most often associated with two conditions, including high density well development at forty-acre spacing (sixteen wells per square mile), and regardless of well spacing when development activity occurred within a the quarter-mile lek buffer;*
- *Extirpation of sage-grouse has not occurred in any of the study areas;*
- *Long-term fluctuations in sage-grouse population trends in Wyoming reflect processes such as precipitation regimes rather than energy development activity; however, energy development can exacerbate fluctuations in sage-grouse population trends over the short-term.*

Scientists studying sage-grouse clearly have varying interpretations concerning effects of oil and gas development on population trends. Has BLM considered results of studies conducted by Ramey et al (2011) and Taylor et al (2007) in addressing the effects of oil and gas development on sage-grouse and sage-grouse habitat? The impacts recorded for the (past) intense developments in Wyoming cannot be assumed to be typical of what would occur in the MCFO planning area with future oil and

gas development How is that an appropriate assumption given *"intensive developments were permitted decades ago, using older, more invasive technologies and methods"* (Ramey et al 2011)?

In addition, most of the recorded effects on sage-grouse populations have been based on lek counts. These studies indicate that oil and gas activities have reduced lek counts in the vicinity of oil and gas developments but have not shown that population losses have occurred. Ramey et al (2011) reported, *"In the case of sage-grouse, reduction in male lek counts has been assumed to equate to population losses. To our knowledge, this hypothesis has not been tested with probability based population counts."*

Populations of sage-grouse are frequently mentioned in the cited reference and in the DEIS; however, there is no discussion of what constitutes a sage-grouse population. Are all of the sage-grouse in the MCFO planning area one population? If not, how many populations are there thought to be and how does this influence management direction?

Page 3-80 – *"Nearly 16 percent of Sage-Grouse Management Zone 1 is within 3 kilometers of oil and gas wells, a distance in which ecological impacts are likely to occur (Knick et al 2011). Much of the current oil and gas development is occurring on private lands, with little or no mitigation efforts, which elevates the ecological and conservation importance of sage-grouse habitat on public lands."*

COMMENT: Please provide the source of information (citation) which states that current oil and gas development is occurring on private land with little or no mitigation efforts. In addition, this statement refers to the entirety of Management Zone 1, a portion of which includes northeastern Wyoming where intensive oil and gas development has occurred. Any such statistics must be tied to the MCFO planning area specifically. What percentage of the MCFO planning area is within 3 kilometers of oil and gas wells?

Page 3-81 – *"Knick et al (2003) indicate that there are no active grouse leks within approximately one mile of Interstate 80 across southern Wyoming and only 9 leks known to occur between 1 and 2.5 miles of Interstate 80."*

COMMENT: This statement appears to have a questionable scientific basis because it is not stated how many leks were present prior to construction of the Interstate. What factors other than the Interstate could affect the initiation and maintenance of leks?

Page 3-81 – *"In Sage-Grouse Management Zone 1, urbanization and infrastructure development has also affected greater sage-grouse habitat. Development of population centers and subdivisions and smaller ranchettes and associated buildings, roads, fences, and utility corridors has also contributed to habitat loss and fragmentation in portions of Sage-Grouse Management Zone 1. Current estimates suggest that about 16 percent of the management zone is within 6.9 kilometers of urban development, although Sage-Grouse Management Zone 1 generally has lower rates of population increases compared to other management zones (Knick et al 2011)."*

COMMENT: Similar to comments posed above, why haven't statistics been developed specific to the MCFO planning area? What percentage of the MCFO planning area is within 6.9 kilometers of urban

development and other infrastructure (e.g., highways, wind farms, communication towers) and how do these values affect management direction?

Page 3-82 – *"The greater sage-grouse range in Sage-Grouse Management Zone 1 is very similar to overall portions of the range in which sage-grouse have been extirpated already (i.e., areas with high human footprints), mostly because of the abundance of and distribution of sagebrush occurring in Sage-Grouse Management Zone 1 (Wisdom, Meinke, Knick, and Schroeder 2011), which suggests sage-grouse in Sage-Grouse Management Zone 1 are more vulnerable to declines than those in other portions of sage-grouse range."*

COMMENT: This is a puzzling statement. If Sage-Grouse Management Zone 1 is "very" similar to overall portions of the range in which sage-grouse have been extirpated, "mostly because of the abundance and distribution of sagebrush", please explain why the seven sage-grouse management zones were delineated based on floristic provinces. Presumably, they differed based on floristic characteristics of which sagebrush is a major component. Suggesting that sage-grouse are more vulnerable to declines in Management Zone 1 because of the abundance and distribution of sagebrush does not have a scientific basis.

Based on human effects to sagebrush habitat, it would appear that Management Zone 1 would be the least likely to experience extirpation of sage-grouse. The following statement from page 3-81 supports a contention that sage-grouse in Management Zone 1 are the least likely to experience impacts from the "human foot print", *Current estimates suggest that about 16 percent of the management zone is within 6.9 kilometers of urban development, although Sage-Grouse Management Zone 1 generally has lower rates of population increases compared to other management zones (Knick et al 2011).*

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

Page 4-130 – Sage-grouse Management

COMMENT: BLM needs to clearly explain assumptions made in this section concerning sage-grouse management. According to the DEIS, there is an assumption that male sage-grouse lek attendance is a reliable index of population numbers and trends. Ramey et al (2011) indicate that the reduction in male lek counts has been assumed to equate to populations; however, this hypothesis has not been tested with probability based population counts. Does MCFO assume that male attendance on leks is in direct proportion to population size? If so, what is the scientific justification for this assumption? If not, what is the statistical relationship between male lek attendance and population size, and why?

Page 4-131 – *"The BLM would utilize best available information, management and conservation plans, and other research and related directives, as appropriate; to guide wildlife habitat management on BLM-administered land. Important wildlife habitats (i.e., winter ranges, leks, raptor nests) and locations would be modified based on habitat monitoring surveys, wildlife population surveys, and other information provided by industry, the BLM, and the MFWP."*

COMMENT: The above statement is included within the DEIS as an "assumption or part of the methodology" used to guide wildlife habitat decisions on BLM-administered land. However, this statement does not clearly articulate how this "best available information, etc." would be used to revisit or amend specific management decisions over time (or spatially) via adaptive management.

The basic threshold within the Biological Assessment prepared for the USFWS as part of the *Final Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans* stated that *"Changes in management of future development will occur if male attendance on leks within 2 miles of CBNG development declines by 25% over five-year increments (BLM 2008). Changes may also be made if lesser declines occur in a period of less than five years, when compared with predetermined reference leks (BLM 2008). If downward trends in habitat occupancy or lek attendance are observed, the BLM may use adaptive management strategies. These strategies could include not authorizing or limiting the number of federal well sites, roads, and infrastructure; not authorizing or restricting the timing of operations conducted on federal leases; extending timing and/or increasing distance from leks; or implementing stipulations, COAs, or off-site habitat management/mitigation. Similarly, if populations remain comparable with the reference leks or increase over a five-year monitoring period, management of development may be modified to be less restrictive or the pace of development may be increased (BLM 2008)."*

We request that BLM include a discussion that clearly outlines how existing monitoring and adaptive management mechanisms currently in place as part of the BLM's 2008 *Final Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans* would be extended to management decisions proposed upon implementation of the RMP.

In addition, more detail is needed to explain how BLM intends to collect and apply *"habitat monitoring surveys, wildlife population surveys, and other information provided by industry, the BLM, and the MFWP"*. Would this information be comprised of studies and information conducted on BLM-administered land only or would information collected on other private, state, or federally-administered land (through other single or cooperative public or private efforts) be pooled so that a broader analysis of the success or failure of habitat mitigation could be conducted as recommended by Ramey et al (2011)?

Page 4-131 - Building off of the discussion/comments above, the DEIS states the following: *"The BLM's 2008 Final Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans mandates that sage-grouse habitats, connectivity of habitats, and healthy sage-grouse populations are maintained to serve as source populations. However, since the BLM's 2008 Final Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans was finalized, little CBNG development has occurred and the Wildlife Mitigation and Protection Plan (WMPP) stipulations have not been tested."*

COMMENT: How will the WMPP stipulations discussed above, including provisions for monitoring and adaptive management discussed therein, be carried forward with respect to implementation of the RMP? At present, the DEIS does not include any mention of adaptive management as a tool for addressing the efficacy of proposed restrictions with regards to wildlife management; nor does it discuss the continued role of the WMPP and how (if) those associated restrictions would be considered moving forward. We request clarification on this issue.

Page 4-135 – *"In some areas, such as the Cedar Creek Anticline, decreased male lek attendance has exceeded 80 percent, which is largely attributed to oil and gas development."*

COMMENT: What is the source for (citation for) this information?

Page 4-135 – *"The efficacy of BLM NSO stipulations for leasing and development within 0.25 miles of a lek would result in an estimated lek persistence (the ability of leks to remain on the landscape) of approximately 5 percent, while lek persistence in areas without oil and gas development would be expected to average 85 percent."*

COMMENT: Source references/citations are needed for this statement and many other declarative statements in this section. Just because BLM makes such assertions does not mean they are accurate or scientifically founded. Please provide citations regarding what studies this assertion is based upon and discuss (and cite) the time frame over which lek persistence is evaluated. If persistence of leks on areas without oil and gas development is 85 percent, what is the cause of the 15 percent loss in lek persistence? What time period is assumed for the 85 percent figure? If 15 percent of leks fail to persist, all leks would eventually be extirpated. Is there an implicit assumption that the 15 percent loss in lek persistence is compensated by establishment of new leks, which would maintain viable populations?

Page 4-135 – *"Male lek attendance would be expected to be reduced when subjected to the current standard noise limitation of 50 decibels at the lek site."*

COMMENT: What is the source (citation) of this information? What scientifically documented monitoring has been done to show that noise in excess of 50 decibels at the lek site has reduced lek attendance?

In addition, Page 3-81 states, *It should be noted that median noise levels for rural areas would range from 20 to 40 dBA in the morning and evening and from 50 to 60 dBA in the afternoon (when wind speeds would typically be the greatest) (Mariah Assoc. 2005).*

The DEIS does not present information to document whether these noise levels are natural or generated by human activities. Indisputably, wind has a substantial effect on noise levels. Do natural factors such as wind increase median noise levels to 50 to 60 dBA at leks and if so do natural factors such as wind noise reduce lek attendance? Clarification of these points has implications for monitoring leks to estimate population trends.

Moreover, Ramey et al (2011) reviewed effects of noise on wildlife including sage-grouse and stated that the A-weighted decibel dB(A) method of measuring sound is based on human hearing response and is not universally applicable to other species, which may be more sensitive to sound. Sage-grouse also may be more sensitive to low-frequency sounds and infrasound transmitted through the ground than arboreal bird species and this sound could not be measured by dB(A). We ask that such considerations be addressed in statements regarding noise-related impacts.

Page 4-162 – *"Because it would take 4 or more years from initiation of disturbance to noticeable population responses, impacts may not be known at or prior to the project initiation stage."*

COMMENT: This statement is not supported by a citation. Why would it take 4 or more years to detect population effects? Based on the previous discussion in this DEIS, lek counts appear to be equated with sage-grouse populations. Although this assumption may be questionable in terms of supporting scientific studies, lek counts would provide insights into population effects in less than 4 years. However, the validity of the data in assessing trends in populations could take many years and would need to be analyzed relative to reference leks that serve as a control to isolate variables associated with oil and gas development. The reference to 4 years implies an impact threshold that needs to be explained and justified with a scientific basis as it has management implications.

Page 4-162 – *"A CSU stipulation that allowed activities in a manner that provided for sage-grouse movement and genetic exchange, maintained leks, and ensured restoration of altered habitat would be ineffective in protecting sage-grouse and their habitats."*

COMMENT: We request BLM to explain why such stipulations are considered to be ineffective in protecting sage-grouse and their habitats. These are the factors that are typically thought to benefit sage-grouse populations.

Page 4-163 to 167 – **Cumulative Impact**

GENERAL

The cumulative impact section summarizes the past effects of various land uses and other factors that have affected wildlife, including sage-grouse. This discussion appears to repeat much of the discussion in Chapter 3. As discussed previously in our comments on Chapter 3 and the associated potential direct and indirect impacts discussion in Chapter 4, addressing predicted impacts to sage-grouse relies heavily on research conducted in Management Zone 1. However, the cumulative effects of land management within the MCFO planning area on sage-grouse over this broader Management Zone 1 area are not addressed under Cumulative Impacts.

While Management Zone 1 is extensively referenced in Chapter 3, BLM fails to address the relationship of sage-grouse and their habitat within the larger Management Zone 1 to the MCFO planning area. From the text in this DEIS, it appears that Management Zone 1 is thought to be important for sage-grouse management; however, there is no reference to Management Zone 1 in the cumulative effects section. The section on potential cumulative impacts would be an ideal place to address the relationship among planning and management activities in Management Zone 1 and

the MCFO planning area. At a minimum, the MCFO DEIS must address the potential cumulative effects of the proposed planning activities in the MCFO planning area as they relate to the HiLine and Billings Pompey's Pillar planning areas.

In addition, the potential cumulative effects discussion does not address the effects of livestock grazing on private and public land on sage-grouse and other wildlife. The DEIS (page 4-60) states, *"Determining season-of-use and livestock numbers for grazing permits on a case-by-case basis would not necessarily result in high quality sage-grouse habitat. The reduction in grass height caused by livestock grazing in sage-grouse nesting and brood-rearing areas has been shown to negatively impact nesting success when residual herbaceous cover was reduced below approximately 7 inches needed for predator avoidance (Gregg et al 1994). Livestock grazing would potentially reduce suitability of breeding and brood-rearing habitat, which would impact sage-grouse populations (USFWS 2010a)."*

Grazing undoubtedly has the potential to affect sage-grouse habitat; however, it is unclear how sage-grouse habitat and displacement of sage-grouse have been affected by grazing practices in the planning area and the broader region (e.g., Management Zone 1). The DEIS's potential cumulative effects discussion must appropriately evaluate collective or additive effects of livestock grazing, energy development, and other activity on public and private land on sage-grouse.

The potential cumulative effects discussion for Alternative E (page 4-175) states that *"Under the RFD prediction and with 15 percent of the surface administered by the BLM, sage-grouse populations would continue to decline. Areas of development in which 8 or more well pads per section were allowed, in combination with the existing and proposed development occurring across the Montana border in Wyoming, would potentially result in the complete loss of sage-grouse in these areas."*

COMMENT: This statement raises the question of how this DEIS addresses well-pad density. Under Alternative E, what are the projected well-pad densities in the various categories of sage-grouse habitat? Moreover, what scientific citation has BLM relied upon to make this assumption? One would hope that it was not based upon data collected for older, intensively developed areas, such as the Jonah Field in Wyoming.

Page 4-165 – *"Absent a West Nile virus outbreak, a 2 percent tillage rate within 0.6 miles of the Haxby leks would decrease counts to 91 percent of current numbers, but an outbreak of West Nile virus would reduce counts to 42 percent of current numbers, resulting in the disappearance of large leks (more than 25 males) Taylor et al (2010)."*

COMMENT: The specific nature of the projected effects associated with small rates of tillage and West Nile Virus need to be explained in more detail. Were these projections based on a predictive model? At a minimum, the statements made above need to explain whether potential effects to sage-grouse are "predicted to reduce" lek counts (versus "would reduce" and "predicted to result" (versus "resulting") in the disappearance of large leks. Is it possible to accurately predict results of disease (i.e., 42 percent) with all of the variables associated with possible transmission of this virus?

Page 4-165 – *"Large leks (more than 25 males) continue to be the best indicator of population status and their abundance is an important measure for prioritizing management strategies to maintain populations."*

COMMENT: If it is assumed that male lek attendance is an index of population status, then the logic would be that a small lek would equate to a small population and a large lek would equate to a large population, as a direct proportion. If this is not implied in the above statement on Page 4-165, what is the relationship between numbers of males on a lek and population status? Why would large leks be a better indicator of population status than small leks?

Page 4-165 – *"Areas of development in which 8 or more wells pads per section were allowed, in combination with existing and proposed development occurring across the Montana border in Wyoming, would potentially result in the complete loss of sage-grouse in these areas."*

COMMENT: On what is the conjecture based that 8 or more well pads per section and some undefined level of additional development would result in the complete loss of sage-grouse? Were studies conducted that support this generalization? How does this assumption apply to the MCFO planning area? Taylor et al (2007) reported that lek abandonment in Wyoming was most often associated with a density of 16 wells per section, which is substantially denser than 8 wells per section. What is the well density anticipated for the MCFO planning area under the Alternative E?

Page 4-177 – *"With intermingled land ownership patterns and ongoing or imminent surface-disturbing activities, actions occurring on non-BLM-administered lands would offset any of the derived benefits. The BLM's lack of administrative authority would limit BLM's ability to effectively manage these habitats; subsequently, because of factors over which BLM has little or no control, extirpation of sage-grouse populations within areas of disturbance (such as Cedar Creek anticline and South Carter Restoration area) would be possible and probable."*

COMMENT: What are the derived benefits that would be offset to which the first sentence applies? The basis for the predicted probable extirpation of sage-grouse on land not administered by BLM needs to be supported by a scientific rationale. This statement entirely ignores many of the advances in technology and increased sensitivity to the conservation status of sage-grouse. Ramey et al (2011) identify the following advances in technology that avoid and reduce potential effects of oil and gas development on sage-grouse:

- Directional drilling to reduce surface disturbance by drilling multiple wells from on drilling pad;
- Steerable downhole motors and horizontal well bores that can drill as many as many as 20 boreholes from one pad and greatly increase the effective radius of production from one well pad;
- More efficient drill bits that reduce drilling times and rates of failure;
- Lightweight modular drilling rigs which deploy more easily and require a smaller foot print; and
- Slim-hole drilling, micro-holes and coiled tubing which reduce waste volumes, surface disturbance, and noise impacts.

COMMENT: The listing of sage-grouse as a candidate species under the ESA and its "warranted but precluded" status has increased awareness of the conservation status and conservation efforts and

has led to Wyoming, Montana, and other states to develop statewide conservation strategies to protect sage-grouse and their habitat. As such, the DEIS should reference and discuss how such efforts would interface with proposed BLM restrictions. The following are some of the initiatives that have been developed in response to sage-grouse conservation concerns:

- The Wyoming Governor issued Executive Order 2011-5 that establishes guidelines for managing Greater Sage-Grouse Core Area Protection.
- The Montana Governor issued Executive Order No. 2-2013 establishing a Greater Sage-grouse Habitat Conservation Advisory Council which is mandated to gather information, furnish advice, and provide recommendations to the Governor on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the ESA.
- The USFWS, in 2013, issued the Conservation Objectives Team Report, which provides state, federal, local, and private entities with permitting or land management authority information to support conservation actions for sage-grouse.
- The Sage-Grouse National Technical Team (2011) produced *A Report on National Greater Sage-Grouse Conservation Measures*, which addresses the latest science and best biological judgment to assist in making management decisions.
- The Western Association of Fish and Wildlife Agencies completed the *Greater Sage-Grouse Comprehensive Conservation Strategy* (2006), which identifies the critical need to develop associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of sage-grouse and the landscapes upon which they depend.
- A joint report (*The History and Current Conditions of the Greater Sage-Grouse in Regions with Energy Development* -2007) by U.S. Department of Energy, Interstate Oil and Gas Compact Commission and ALL Consulting provides a historical overview of the sage-grouse to help clarify its regional significance; identifies current conservation plans of important stakeholders; and discusses current and historical management approaches.
- The Natural Resource Conservation Service (NRCS) with the Western Governors Association published *Conserving the Greater Sage-Grouse: Examples of Partnerships and Strategies of Work Across the West*, which illustrates the depth of commitment and cooperation that is taking place across the West to conserve the sage-grouse.
- In 2010, the NRCS and numerous conservation partners (local, state and federal agencies, Tribes, non-governmental organizations) in the Western US established the *Sage Grouse Initiative* to work towards sustaining working ranches and conserve Greater sage-grouse populations in the West using existing voluntary conservation programs.

COMMENT: The referenced statement on page 4-177 of the DEIS also conflicts with statements in the joint report of the Department of Energy, Interstate Oil and Gas Compact Commission and All Consulting (2007), which states, *"The oil and gas industry is a vital component for the successful conservation of sage-grouse. To date, this particular industry has had active members with sage-grouse workgroups and is involved in surveying and monitoring efforts within sage-grouse habitats, such as the Cedar Creek Anticline or Powder River Basin. In certain areas, the oil and gas industry has been responsible for generating sage-grouse distribution density data, as well as other wildlife species, in localities that previously lacked data. The industry is beginning to take a more active role in the conservation and protection of the bird by funding study-based projects."*

DRAFT MONTANA DEIS COMPARISONS - PROPOSED SAGE GROUSE HABITAT MANAGEMENT

This section includes questions generated from a comparative review of the MCFO, HiLine and Billings/Pompey's Pillar RMP/EISs, with a particular focus on the various management restrictions within sage-grouse habitat. **Tables 1** and **2** serve as summaries of main sage-grouse management parameters and management prescriptions included in each of the three referenced RMP/EIS documents and serve as reference points for several specific comments presented below:

Table 1
Sage-Grouse Management Parameters on BLM-Administered Land

Planning Area	BLM Sage Grouse Habitat	Estimated # of Leks	BLM Sage-Grouse Habitat Acreages		
			General Habitat Acres	Protection-Priority Areas	Restoration Areas / Source Population Area
Miles City Field Office (MCFO)	2.5 Million acres	• 386 leks of unconfirmed status, • 455 confirmed active leks, • 33 extirpated leks, and • 19 confirmed inactive leks.	BLM Oil/Gas Lease[1]: • 800,000 acres BLM Surface: • 400,000 acres	BLM Oil/Gas Lease: • 1,403,000 acres BLM Surface: • 792,000 acres	BLM Oil/Gas Lease: • 289,000 acres* BLM Surface: • 109,300 acres* * Of these totals, 8,000 acres of Oil/Gas Lease and Surface are part of the Source Population Area.
HiLine	Unknown [2]	• 154 leks	BLM Administered Federal Mineral Estate (BLM-FME) [1]: • 1,028,661 acres BLM Surface: • 930,265 acres	BLM-FME: • 318,143 acres BLM Surface: • 298,772 acres	BLM-FME: Unknown acres [3] BLM Surface: • 46,786 acres
Billings/ Pompey's Pillar	336,479 Acres[4]	• 19 active leks on BLM Surface (8 inactive) • 30 lek sites are on FME.	BLM-FME: • 116,452 acres BLM Surface: • 78,575 acres	BLM-FME: • 191,543 acres BLM Surface: • 154,140 acres	BLM-FME: • 63,437 acres BLM Surface: • 45,555 acres

[1] See comment below for questions concerning "Oil and Gas Lease" and Federal Mineral Estate" terminologies.

[2] See comment below for a question concerning total BLM acres of sage-grouse habitat within the HiLine Planning Area

[3] See comment below for a question concerning total BLM acres of "Federal Mineral Estate" within Restoration Areas (HiLine RMP/EIS)

[4] See comment below regarding the total acreage reported in Chapter 3, Page 3-85 (Table 3-29) of the Billings/Pompey's Pillar RMP/EIS.

Table 2
Management Prescriptions for Three BLM Planning Areas in Montana

Planning Area	BLM Sage-Grouse Habitat Categories			
	General Habitat Acres	**Nesting/Brood Rearing**	**Protection-Priority and Source Population**	**Restoration Areas**
Miles City [(1)]	Surface-disturbing activities would be avoided within 2 miles of leks CSU stipulations within 2 miles of leks Low-voltage power lines buried within 2 miles of leks	Surface-disturbing activities would be avoided within 4 miles of leks. Timing restrictions (BMP Appendix)	NSO	CSU stipulations
HiLine [(2)]	NSO within 1 mile of leks	CSU stipulations	NSO	---
Billings/ Pompey's Pillar	CSU stipulations NSO on "new oil and gas leases" within 0.6 miles of a lek. Timing restrictions within 3 miles of leks (March 1 – June 15)	Timing restrictions within 3 miles of leks (Mar.1 – June 15) CSU stipulations Geophysical exploration allowed on existing roads Timing-restrictions (Mar1. –June 15) within 4 miles of leks	NSO	NSO on "new oil and gas leases" within 0.6 miles of a lek. Timing restrictions within 3 miles of leks (Mar.1 – June 15) CSU stipulations Geophysical exploration allowed on existing roads Timing-restrictions (Mar1. –June 15) within 4 miles of leks

[(1)] Miles City indicates that sage-grouse protection areas will not be designated as ACECs and no compensation for impacts would be required in sage-grouse impacts (which may conflict with CSU stipulations)

[(2)] Hi Line also has NSO restrictions in sage-grouse wintering areas from Dec. 1 – March 31.

COMMENT: As summarized in **Table 1** above, when discussing specific acreages of sage-grouse habitat that would fall under various management restrictions (based on the respective Preferred Alternatives), the Billings/Pompey's Pillar RMP/EIS and the HiLine RMP/EIS reference BLM Administered "Federal Mineral Estate" and "Surface" under each main sage-grouse management classifications (e.g., General Habitat, Priority Protection Area, Restoration Area). However, the MCFO RMP/EIS references "Oil and Gas Lease" and "Surface" as the two main categories of BLM administration. Please clarify the questions below:

- Are the categories of "Federal Mineral Estate" and "Oil and Gas Lease" intended to represent the same classification? If not, please explain any difference. If yes, please clarify terminologies among all Montana BLM RMP/EISs to aid the public (and potential operators) in consistently interpreting the proposed sage-grouse habitat restrictions.

- Are all proposed surface management restrictions applied equally regardless of whether the BLM Administered Lands in question are "Surface or "Federal Mineral Estate" and/or "Oil and Gas Lease"?
- Is it assumed that if a particular "Surface" acreage is under BLM Management then the mineral estate within that same acreage is also under BLM Administered "Federal Mineral Estate" and/or "Oil and Gas Lease" as well?

COMMENT: Are the 2.5 million acres reported as sage-grouse habitat under BLM Administration (within the MCFO planning area) a summation of the "Oil and Gas Lease" acreages reported for the three main management categories reported in MCFO RMP/EIS Table 2.22? See summary in **Table 1** above (General Habitat Acres [800,000 acres], Protection-Priority Areas [1,403,000 acres] and Restoration Areas and Source Population Area [289,000 acres]).

COMMENT: Three appendices within the MCFO RMP/EIS address management practices to avoid, minimize, and compensate for losses to sage-grouse habitat (i.e., BMPs Appendix, Minerals Appendix, and Fish and Wildlife Appendix). These appendices list specific practices and restrictions that apply to oil and gas development in sage-grouse habitat but do not specify which practices are stipulations that must be met for leasing and development. It is difficult to determine what an oil and gas operator will have to comply with relative to actions in sage-grouse habitat. **Table 2** (below) summarizes what appear to be the primary management restrictions, but they have been summarized from various sections of the RMP/EIS and may not be comprehensive. The MCFO RMP/EIS (and the HiLine and Billings/Pompey's Pillar RMP/EISs accordingly) should identify required stipulations and guidelines (are these the same as BMPs?) in a comprehensive table within either RMP/EIS Chapter 2 or 3.

COMMENT: Two of the three DEISs reviewed indicate that CSU stipulations will be developed for activities in various sage-grouse habitats; however, BLM fails to specify in the MCFO DEIS how CSU such stipulations will be formulated. By comparison, the HiLine RMP/EIS identifies how CSU stipulations will be established in Appendix E.5 and the Billings Pompey's Pillar RMP/EIS describes the development of CSU stipulations in Appendix C. Both the HiLine and Billings/Pompey's Pillar RMP/EISs indicate that the proponent must prepare a plan to maintain the functionality of sage-grouse habitat to assist in identifying CSU stipulations. How will CSU stipulations be identified in the MCFO planning area?

COMMENT: Please clarify the total acreage of BLM-Administered acreage of sage-grouse habitat within the Billings/Pompey's Pillar planning area. Chapter 3, Page 3-85 (Table 3-29), reports a total of 336,479 acres. However the total appears to be 371,432 acres when summing the acreages presented in Chapter 2, Page 2-19 (Table 2-1). Please clarify.

COMMENT: Please clarify and/or provide the total BLM acres of "Federal Mineral Estate" that would be included within the "Restoration Areas" category for the HiLine planning area. This information appears to be missing in the draft HiLine RMP/EIS.

COMMENT: Please clearly depict what management restrictions/prescriptions would be required for the two proposed ACECs within the HiLine planning area; specifically the Grassland Bird/Greater

Sage-Grouse Priority Areas ACEC (461,220 acres) and Greater Sage-Grouse Protection Priority Area ACEC (930,265 acres). Jointly the two ACECs comprise over 1.39 million acres and represent a substantial land area.

COMMENT: To understand the effects of proposed sage-grouse management in the planning areas for the three BLM field offices, the sage-grouse resource (i.e., populations and habitat) that would be affected by various management directives need to be identified. The RMP/EISs for the three planning areas do not present sage-grouse estimates for population sizes (see **Table** 1) so other metrics that represent the sage-grouse resource which will be subject to the proposed management directives need to be presented. To better understand the sage-grouse resource that would be subject to the management prescriptions identified in the three RMPs, the following information should be clearly stated in each DEIS's *Chapter 3 – Existing Environment*:

- Acres of various classes of sage-grouse habitat within each planning area on BLM-administered lands; and
- Number of leks on BLM-administered lands in the planning area.

COMMENT: As shown in **Table 2** above, the planning prescriptions for surface occupancy and controlled surface use for the three planning areas (MCFO, HiLine, and Billings/Pompey's Pillar) are variable which raises questions of how NSO restrictions were determined. Based on review of the three draft planning documents, it appears that all three relied on same data sources to address impacts of oil and gas development on sage-grouse. All planning areas have similar sage-grouse habitat conditions (i.e., all are in Sage-Grouse Management Zone 1), and all are anticipating some level of oil and gas development. It is unclear how different NSO restrictions around leks were developed. NSO restrictions around leks vary among the planning areas, with buffers around leks being 0.6, 1, 2, and 3 miles. Why are these NSO restrictions different for the three planning areas when they all relied on similar sources to define potential impacts associated with oil and gas development? Does sage-grouse vulnerability to impact or population viability differ among BLM planning areas?

Additional Literature Cited

Ramey, R., L. Brown, and F. Blackgoat. 2011. Oil and gas development and greater sage-grouse (*Centrocercus urophasianus*); A review of threats and mitigation measures. The Journal of Energy Development: 35(1); 49-77.

Taylor, R., M. Dzialak, L. Hayden-Wing. 2007. Greater sage-grouse populations and energy development in Wyoming. Accessed March 2013 at http://bogc.dnrc.mt.gov/reports.asp

CONCLUSION

In summary, BLM has failed to properly prepare the DEIS as described above in our comments. In addition to failing to meet the requirements of NEPA, BLM has used Greater Sage-grouse data to develop its plan alternatives that is both not applicable to the MCFO and at such a scale that makes it impossible to make accurate and reasonable land use decisions. Therefore, as stated at the beginning of this comment letter, we formally ask for a redraft of the DEIS to be published for

comment and review before BLM finalizes the DEIS and issues a ROD.

Please do not hesitate to contact us if you have any questions regarding our comments. We appreciate the opportunity to provide them to BLM, despite the fact that an inadequate period for review was provided.

Sincerely,

David A. Galt
Montana Petroleum
Association

Claire M. Moseley
Public Lands
Advocacy

Spencer A. Kimball
Western Energy
Alliance

Cc: The Honorable Max Baucus
The Honorable John Tester
The Honorable Steve Daines
The Honorable Sally Jewel, Secretary of Interior
Neil Kornze – Acting BLM Director
Jamie Connell – Acting BLM Deputy Director
Kate Kitchell – Acting Montana BLM State Director

PUBLIC LANDS ADVOCACY

June 20, 2013

Brian Hockett, Project Manager
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RE: HILINE RESOURCE MANAGEMENT PLAN

Dear Mr. Hockett:

On behalf of the Montana Petroleum Association (MPA), Public Lands Advocacy (PLA), Western Energy Alliance, and Montana Association of Oil, Gas & Coal Counties, following are comments in response to the Notice of Availability of the Draft HiLine Resource Management Plan (RMP) and Draft Environmental Impact Statement (DEIS) published in the *Federal Register* March 8, 2013. The signatories to these comments are all non-profit trade groups who represent the many facets of the petroleum industry. Our member companies have valid existing leases, current oil and gas production, and plans for future leasing, exploration, and production activities in the areas that will be directly impacted by the proposed decisions in the Draft HiLine RMP.

The Planning Criteria identified in Chapter 1 states that *"Broad-based public participation will be an integral part of the planning and EIS process."* We agree that public participation is an integral part of the planning process. We ask how BLM believes interested parties have been afforded the ability to fully digest and provide coherent and substantive comments within a 90-day window on three major draft RMPs issued in Montana within a three week period. It is unrealistic for BLM to expect the heavily affected oil and gas industry, not to mention the general public, to have the ability to conduct an adequate review when they have been provided a very narrow window in which to review these three enormous documents. We believe BLM is making a rush to judgment without appropriate and accurate consideration of the impacts associated with the management considerations contained in the DEIS.

FAILURE TO COMPLY WITH NEPA

The purpose of analysis under the National Environmental Policy Act (NEPA) as well as BLM's planning process is for BLM to publically disclose the potential impacts of various management strategies under consideration by the agency. Specifically, the CEQ NEPA regulations at 40 CFR §1502.9(a) directs the agency to *"make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action."* While BLM may have explained its management scenarios by alternative in the DEIS, it has omitted any useful and consistent explanation of potential impacts

associated with each of the alternatives selected for detailed review in the document. There are countless inconsistencies throughout the documents making it impossible for reviewers to understand the changes in resource uses and management proposed by BLM under each alternative. The regulation at 40 CFR § 1502.14, requires presentation of the *"environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public."* Additionally, the regulation at § 1502.16 requires a *"scientific and analytic basis for comparisons"* of the information provided in accordance with § 1502.14 necessary to support the comparisons. The BLM's planning regulations similarly require the BLM to estimate the physical, biological, economic, and social impacts associated with each alternative in the RMP EIS. 43 CFR § 1610.4-6 Absent a consistent and sufficient description of the potential environmental impacts associated with each alternative, BLM has failed to meet both of the "twin purposes" of NEPA, understanding potential impacts and public disclosure of said impacts. See Baltimore Gas & Electric v. Natural Resources Defense Council, 462 U.S. 87, 97 (1983). For this reason alone, the BLM must prepare a revised draft environmental impact statement. 40 C.F.R. § 1502.9(a)

We find BLM's use of Greater Sage-grouse data not directly applicable to the planning area highly problematic and outside the requirements of NEPA. While we recognize that NEPA allows for the best available science to be used during planning, the fact that none of the data referenced by BLM applies to the actual lands and habitat under the jurisdiction of HiLine Field Office cannot be utilized as the basis for decisions. In fact, we believe the data used was developed based upon intensively developed natural gas fields in Wyoming which are completely analogous to any projected development in the HiLine FO planning area.

Further, BLM has failed to explain its rationale for selecting the Preferred Alternative. It is inadequate for BLM to simply identify a preferred alternative without providing detailed analysis that supports WHY such an alternative is in the best interest of the agency and public. According to the BLM's Land Use Planning Manual and Land Use Planning Handbook, II.A.7, pg. 22 (Rel. 1-1693 03/11/05), BLM must identify how the Preferred Alternative best meets the multiple use and sustained yield requirements of FLPMA. This lack of meaningful analysis constitutes a fatal flaw in the DEIS. Therefore, in accordance with 40 CFR 1502.0(a), we find the DEIS *"inadequate as to preclude meaningful analysis"* and recommend the agency prepare and circulate a revised draft which provides the analysis necessary to support each of the management alternatives, including the preferred alternative.

INADEQUATE MAPPING PROTOCOLS

The 1-Km resolution datasets and 1:2,000,000 scale maps used in the BLM planning process are viable tools for multi-state or sub-continental planning efforts, but they become totally meaningless at field office or even county level. In particular, datasets and mapping sage-grouse habitat at these scales grossly mischaracterize historic and potential habitat by including non-habitat as well as overlooking microhabitat characteristics, especially in diverse and fragmented landscapes. Likewise, threats to sage grouse are also entirely overestimated when using sub-continental scale mapping, such as that used in the planning effort, in particular for the Greater Sage-grouse. It is

ironic that when BLM requires maps from industry, they must be at a 1:24,000 scale rather than the scale BLM believes is appropriate for a much larger effort.

Most of the conventional literature regarding sage-grouse starts with the assertion that ~60% of historic range has been lost. This is based on work done by Schroeder et al in 2004, and has become the cornerstone of mainstream sage-grouse research. It too is at a 1:2,000,000 scale and provides the basis for much of the US Fish and Wildlife Service (FWS) and BLM policy regarding sage-grouse. Of great concern, however, is the fact that this scale provides wholly unsuitable data when conducting any analysis or planning at FO level.

The most recent paper by Knick et al concluded that sage-grouse lek abandonment will occur with as little as 3% human disturbance with a 3-mile radius of a lek. Unfortunately, their methods apply cumulative human impacts over the past 100 years to a static snapshot of lek status (active or abandoned). In other words, no consideration was given to the timing of the human disturbance with respect to the status of a lek in question. It is assumed that any lek abandonment was due to cumulative human impacts. This approach is unacceptable and our comments address these concerns.

DEIS FORMAT

The format of the HiLine DEIS makes it virtually impossible to fully comprehend BLM's management goals, objectives and alternative options because they are spread out among the chapters in piecemeal fashion. Even the basic descriptions of the alternatives and their priorities are extremely convoluted and virtually impossible to track. One is forced to wade through countless pages of resource descriptions for each alternative in separate sections, forcing the reader to jump from one section to another to understand the proposed management. Moreover, the inconsistencies found throughout the documents eliminate any possibility that reviewers will understand the changes in resource uses and management proposed by BLM under each alternative. We strongly recommend that BLM adopt a revised format for subsequent planning documents that provides resource and decision-related information in an easy to follow, consistent format.

Another significant flaw in the DEIS is the conspicuous lack of resource maps, in particular wildlife and plant maps. The lack of maps is especially egregious because it makes it impossible to discern where BLM proposes specific management actions, which is a primary objective of NEPA, as discussed above.

THE PLANNING AREA HOLDS IMPORTANT NATURAL GAS RESOURCES

The HiLine planning area has been demonstrated to contain significant natural gas resources, predominately since 2001. Of the more than 3,600 wells drilled between 1990 and 2005, 93 percent were productive natural gas wells. According to the DEIS, as of 2006 the planning area produced a total of 56.3 billion cubic feet of natural gas, or 61% of Montana's total natural gas production. Clearly, Montana has the ability to provide much needed natural gas resources that will bolster the nation's flagging economy.

An indicator of industry's interest in the HiLine planning area is demonstrated by the fact that a significant portion of the planning area is already under lease for oil and gas resources. However, the DEIS is not clear regarding how many tracts have actually been sold along with the total acreage they encompass. For example,

- Chapter 2, Page 2-38 indicates that *"existing oil and gas leases (803,656 acres) will continue according to the respective stipulations until they expire."*
- Chapter 3, Page 3-275 states *"In February 2011, more than 939,700 acres of federal minerals were leased for oil and gas within the planning area*
- Chapter 3, Page 3-293 states *"Between 1998 and 2012, approximately 270 federal leases consisting of approximately 254,176 acres were nominated and offered for lease in the planning area. As of December 2012, 1,199 existing federal oil and gas leases covered 804,873 acres, or approximately 19% of the federal oil and gas mineral estate in the planning area."*

Accurate leasing figures along with acreages need to be included in the final planning documents. This another example of the inconsistencies found throughout the planning document that must be remedied.

CHAPTER 1 – PURPOSE AND NEED

While BLM claims to its "multiple-use" mission as directed by the Federal Land Policy and Management Act (FLPMA) in the DEIS, the management alternatives addressed do not support that claim due to the broad restrictions proposed in the preferred and other alternatives. Multiple-use is important to those who rely upon public lands for goods and services that provide essential revenue streams to the state and counties of Montana as well as those whose interests rest primarily upon aesthetic values of the area. It is also critical for this concept to be carried forward in the planning documents. Our comments below address areas where BLM exceeds its management authority, particularly with respect to air quality, unjustifiably surpasses the recommendations of the US Fish and Wildlife Service (FWS) in managing wildlife habitat and proposes to impose unduly restrictive measures on mineral resources.

We also support BLM's identification of fluid minerals as a primary issue for consideration in the planning process and BLM's management vision/goal on Page 16 which states the agency will *"Ensure dependable and environmentally responsible exploration and development of mineral resources and renewable energy consistent with other resource goals."* However, this goal will not be met if the preferred alternative is implemented.

VALID EXISTING RIGHTS

Page 1-14 - *"The RMP will recognize valid existing rights."*

Page 2-39 – *"The existing oil and gas leases (803,656 acres) will continue according to the respective stipulations until they expire...New surface use stipulations (including TLS, CSU, and NSO) cannot be applied to existing oil and gas leases or other existing valid use authorizations such as rights-of-way.*

Site-specific actions such as APDs and rights-of-way in areas with existing oil and gas leases will be allowed, subject to surface use stipulations and best management practices (Appendix E.2)."

COMMENT: We support BLM's recognition of valid existing lease rights. According to FLPMA, the Mineral Leasing Act (MLA) and BLM's Planning 1600 Handbook, BLM does not have the authority to impose new stipulations on leases after they have been issued. Nor does BLM have authority to impose mitigation measures, such as Conditions of Approval (COA), that exceed the terms and conditions of previously issued leases. In sum, BLM cannot deprive operators of their rights to develop pre-existing leases in accordance with the terms under which they were issued.

ENERGY DEVELOPMENT IS A LEGITIMATE USE OF PUBLIC LANDS

Under FLPMA, BLM is required to manage the public lands on the basis of multiple use and sustained yield. 43 USC § 1701(a)(7) (2006). *" 'Multiple use management' is a concept that describes the complicated task of achieving a balance among the many competing uses on public lands, 'including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and [uses serving] natural scenic, scientific and historical values.' "* Norton *v. Southern Utah Wilderness Alliance*, 542 U.S. at 58 (quoting 43 U.S.C. § 1702(c)). *"Of course not all uses are compatible." Id.* We recognize the challenging task BLM in managing public lands in the HiLine FO for multiple-use. However, oil and gas development is a crucial part of the BLM's multiple use mandate and the agency must ensure that oil and gas development is not unreasonably limited in the RMP.

FLPMA clearly identified mineral exploration and development as a principal or major use of the public lands. (43 U.S.C. § 1702(l)) To that end, FLPMA requires the BLM to foster and develop mineral activities, not stifle and prohibit such development.

STATUTORY REQUIREMENTS

Energy Policy Act of 2005

Section 363 of the Energy Policy Act of 2005 (EPAct) requires federal land management agencies to ensure that lease stipulations are applied consistently and to ensure that the least restrictive stipulations are utilized to protect many of the resource values to be addressed. The DEIS ignores established BLM policy that states "*the least restrictive stipulation that effectively accomplished the resource objectives or uses for a given alternative should be used.*" Moreover, BLM has failed to demonstrate that less restrictive measures were considered but found insufficient to protect the resources identified. A statement that there are conflicting resource values or uses does not justify the application of restrictions. Discussion of the specific requirements of a resource to be safeguarded, along with a discussion of the perceived conflicts between it and oil and gas activities must be provided. Clearly, an examination of less restrictive measures must be a fundamental element of a balanced analysis and documented accordingly in the FEIS.

Energy Policy and Conservation Act of 2000(EPCA)

In April 2003, field offices were directed to comply with four EPCA planning integration principles:

1) *Environmental protection and energy production are both desirable and necessary objectives of sound land management and are not to be considered mutually exclusive priorities.*
2) *The BLM must ensure appropriate accessibility to energy resources necessary for the nation's security while recognizing that special and unique non-energy resources can be preserved.*
3) *Sound planning will weigh relative resource values, consistent with the FLPMA.*
4) *All resource impacts, including those associated with energy development and transmission will be mitigated to prevent unnecessary or undue degradation (BLM 2003a)."*

Under EPCA BLM is required to identify impediments to oil and gas development. It was the intent of Congress that access to energy resources be improved as indicated in EPCA and EPAct. BLM recognized the intent of the both Phases I and II of the EPCA review when it issued Instruction Memorandum 2003-233, *Integration of the Energy Policy and Conservation Act (EPCA) Inventory Results, into the Land Use Planning Process*. Consequently, BLM Field Offices are now required to review all current oil and gas lease stipulations to make sure their intent is clearly stated and that stipulations utilized are the least restrictive necessary to accomplish the desired protection. Moreover, the IM directs that stipulations not necessary to accomplish the desired resource protection be modified or dropped using the planning process.

Since the purpose of integrating the EPCA results into planning is intended to determine whether existing resource protection measures are inadequate, adequate or excessive, we recommend that BLM reevaluate its management decisions accordingly and make requisite changes to the final planning documents

An examination of less restrictive measures must be a fundamental element of a balanced analysis and documented accordingly in the FEIS. Moreover, under EPCA BLM is required to identify impediments to oil and gas development. It was the intent of Congress that access to energy resources be improved. BLM recognized the intent of the both Phases I and II of the EPCA review when it issued Instruction Memorandum 2003-233, *Integration of the Energy Policy and Conservation Act (EPCA) Inventory Results, into the Land Use Planning Process*. Consequently, BLM Field Offices are now required to review all current oil and gas lease stipulations to make sure their intent is clearly stated and that stipulations utilized are the least restrictive necessary to accomplish the desired protection. Moreover, the IM directs that stipulations not necessary to accomplish the desired resource protection be modified or eliminated using the planning process.

BLM asserts it would set aside only 4 percent of the federal mineral as closed to oil and gas leasing. However, this is highly deceptive due to the imposition of No Surface Occupancy (NSO) stipulations on nearly 2 million acres under the Preferred Alternative. This overzealous use of NSO in reality puts most of the FO out of reach for new oil and gas exploration and development and would compromise expansion of existing development.

ALTERNATIVES

Table 2.2
Areas Open and Closed to Oil and Gas Leasing (Acres)

	Alternative A (Current Management)	*Alternative B*	*Alternative C*	*Alternative D*	*Alternative E (Preferred Alternative)*
Open – NSO	282,062	258,560	1,291,160	357,456	1,711,378
Leased	28,954	78,469	338,636	33,504	182,060
Unleased	253,108	180,091	952,524	323,952	1,529,318
Open – TLS/CSU	2,649,241	3,291	1,681,990	2,461,652	1,460,097
Leased	578,195	1,544	341,765	545,301	561,866
Unleased	2,071,046	1,747	1,340,226	1,916,351	898,230
Open – Standard Terms Only	457,849	55,962	299,713	597,668	167,274
Leased	196,508	15,978	123,255	224,851	57,306
Unleased	261,341	39,983	176,458	372,817	109,967
Closed	102,298	3,173,637	218,586	74,674	152,702
Leased	0	707,665	0	0	2,424
Unleased	102,298	2,465,972	218,586	74,674	150,278

Page 3, Chapter 1, states "*The BLM administers approximately 2,437,000 acres of public land and 4,240,000 acres of federal minerals within the planning area in Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole, and Valley Counties*" for a total of 6,677,000 acres subject to BLM management.

COMMENT: When the acreage figures in Table 2.2 are tabulated by alternative, it is apparent BLM has only addressed about half of the acreage under its jurisdiction. The leasing categories for each alternative add up to approximately 3,491,450, give or take 1,000 acres. What is BLM's proposed management for the remaining 3.2 million acres? If this acreage is subject to the management controls of other agencies, why aren't they identified in the DEIS?

PREFERRED ALTERNATIVE E

As illustrated in Table 2.2, BLM has chosen the most restrictive management option as its Preferred Alternative. We oppose BLM's selection of this alternative because it arbitrarily and over-zealously restricts all multiple-use activities within the planning area. Adoption of Alternative E will have a chilling impact on all public land uses, including oil and gas exploration and development and its associated revenue streams. As custodian of public lands, BLM is obligated to fully consider the impacts its management would have on not just resource values, but also the rural areas which rely upon public lands for their livelihoods as well as the impacts management of federal lands would have on their economies.

BLM has chosen to stifle any future energy and mineral development under not only under Alternative E, but also Alternatives B and C, which would impose huge swaths of NSO or other highly

restrictive stipulations without discussion as to why they are needed to protect the resource and that current management has been proven inadequate. Once again we refer to BLM's obligation to demonstrate that less restrictive measures were contemplated but found inadequate to protect available resources.

On the whole, the DEIS lacks the analysis required to successfully or scientifically justify these dramatic proposed changes in management. Even though BLM has quantified the impacts this alternative would have on activities, including oil and gas, it fails to adequately describe the need for such changes. It is incumbent upon BLM to clearly and specifically explain why current management strategies have proven inadequate in managing the variety of resource values that exist within the planning area. BLM has failed to provide this information in the DEIS which is why it fails to comply with the requirements of NEPA. We have described in greater detail these deficiencies in our following comments.

- *"The number of new oil and gas wells in the planning area (both federal and non-federal mineral estate) projected under each alternative to be drilled over the next 20 years are shown in Table 4.37. Also, Tables 4.2 and 4.3 at the beginning of Chapter 4 provide a more detailed look at the projected well counts."*

Table 4.37
Projected New Oil and Gas Wells in the Planning Area
(includes Federal and Non-Federal Mineral Estate)

	Federal Mineral Estate	*Planning Area Total*
Alternative A (Current Management)	1,874	6,014
Alternative B	647	4,787
Alternative C	1,617	5,756
Alternative D	1,894	6,034
Alternative E (Preferred Alternative)	1,756	5,896

COMMENT: We find it confusing that BLM projects only 118 fewer wells to be drilled under the preferred alternative compared to current management, particularly given the fact that NSO stipulations will be imposed on nearly 2 million acres (over a 600 percent increase) in the planning area. Consequently, one can only assume that BLM's preferred alternative will effectively preclude any new wells from being drilled outside currently leased acreage. We object to BLM's plan to stifle new exploration activities, particularly when 25 percent of the federal oil and gas minerals in Montana is already unavailable for exploration and development activities.

Despite the agency's view that it must protect all sage-grouse habitat from oil and gas activities, it is our contention that much of the data BLM relies upon is outdated and fails to take into account the positive aspects oil and gas activities have on sage grouse habitat. As pointed out later in these comments, the oil and gas industry makes important contributions to the conservation of sage-grouse by funding studies, surveys and monitoring activities which provide crucial, up-to-date scientific data that would otherwise be unavailable. We urge BLM to reconsider its approach in selecting Alternative E as its preferred alternative and to settle upon a more balanced management approach which recognizes the benefits of oil and gas development in efforts to conserve wildlife, such as the sage-grouse.

Page 726, Chapter 4 – "*Although much of the short-term effects to wildlife habitat and populations are mediated by reclamation, those reclaimed areas adjacent to or surrounding long-term habitat disturbance do not necessarily result in reclaimed wildlife habitat. Many species often avoid areas of long-term surface disturbance and disruption resulting in long-term indirect effects. The number of wells anticipated in the high and moderate potential areas are also expected to result in most of these potential areas being within 1,000 meters of an existing well (avoidance zone for big game) based on the number of anticipated wells and the amount of lands currently outside the avoidance zone in each potential area (Table 4.96).*"

COMMENT: The paragraph above is specifically attributed to fluid mineral development. There are many measures that BLM has apparently failed to consider which ameliorate such impacts on a broad scale. Concentrated habitat disturbance is typically short-term in nature because they are the result of initial construction activities. Once a well is completed and put into production, interim reclamation can significantly reduce the footprint of the activity and access to the site is substantially reduced. For facilities that require long-term placement, measures to limit their impact can be utilized, such as combining them to a single location, where technically and economically feasible. With respect to the type of reclamation that is undertaken, industry complies with the parameters established by BLM, such as seeding and contour of the site. We object that BLM has chosen to ignore the many measures that can, and are, taken to lessen the impact of activities in wildlife habitat.

COMPENSATORY MITIGATION

Page 164 – "*Even after avoiding and minimizing impacts, projects that will cause adverse impacts to resources typically require some type of compensatory mitigation. Compensatory mitigation refers to the restoration, establishment, enhancement, or in certain circumstances preservation of resources for the purpose of offsetting unavoidable adverse impacts. The BLM will determine the appropriate form and amount of compensatory mitigation required. Methods of compensatory mitigation include restoration, establishment, enhancement and preservation.*"

COMMENT: We emphatically oppose the inclusion of compensatory mitigation in the preferred alternative because it cannot be justified given the plethora of protective requirements with which industry must already comply to effectively reduce or eliminate impacts associated with oil and gas activities on public lands. It also ignores the principle of avoiding unnecessary and undue impact which is the cornerstone of federal land use policy. Industry is already forced to conduct multiple resource surveys on behalf of BLM as well as to comply with numerous BMPs; COAs; restrictive regulatory thresholds; NEPA analyses; along with a host of additional federal agency and state requirements. We find it unconscionable that BLM states it intends to dig even deeper while failing to even disclose specific criteria, circumstances and the amounts when compensatory mitigation may be required. No clarification as to what constitutes a purported unacceptable level of change is provided in the DEIS. Further, what recourse will an operator have if it is believed such a requirement is excessive?

We have no doubt that without specific guidance, resource specialists will be disposed to require compensatory mitigation whenever it suits them, without regard for operator-committed mitigation measures. The fact that a lease has been issued by BLM is clear evidence that a certain level of impact is acceptable as dictated by the stipulations attached. When the operator proposes an activity, it must comply with these stipulations. The Mineral Leasing Act, the regulations at 43 CFR 3101.1-2, as well as BLM's 1624 Manual, directs that new stipulations cannot be applied to existing leases; this includes COAs or other measures that exceed the terms of a lease. Specifically, once a lease has been issued, BLM does not have the authority to prevent development unless the lease terms prohibit surface occupancy or development would result in "unnecessary or undue degradation," which could not be mitigated. Under 43 CFR 3101.2, guidance is provided detailing what authority the agency has to modify the parameters of the stipulations in order not to compromise valid existing lease rights granted by the lease.

BLM has previously cited as its authority to address the mitigation of impacts from FLPMA §102(a)(8), "...the public lands [will] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource and archeological values...." However, we remind BLM that FLPMA §102(a)(12) further directs that "*the public lands [will] be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 U.S.C. 21a) as it pertains to the public lands.*" [Emphasis added] Moreover, while FLPMA §302(b) states *"the use, occupancy and development of public lands must be regulated by the Secretary through easements, permits, leases, licenses, or other instruments,"* the agency must also fully acknowledge the rest of this section which clearly directs that *"these instruments include, but are not limited to, long-term leases to permit individuals to utilize public lands for habitation, cultivation, and the development of small trade or manufacturing concerns."*

Compensatory mitigation directly conflicts with EPCA language which requires BLM to evaluate the extent and nature of any restrictions or impediments to the development of resources including: (B) post-lease restrictions, or delays on development for conditions of approval, applications for permits to drill, or processing of environmental permits. [See EPCA phase II, page xxi]. We view this new requirement as a gambit for BLM to capitalize on industry's willingness to work with the agency to ensure mutually beneficial energy projects can move forward.

In proposing a program of compensatory mitigation, BLM has obviously failed to acknowledge the extent of industry participation in and funding for partnership programs such as habitat improvement projects, public land restoration programs, which, in nearly all cases, were all entered into on a voluntary basis. Additionally, industry routinely pays for wildlife studies and inventories, such as wetlands, cultural, wildlife, and threatened and endangered species resources as well as project level NEPA documents. In light of the fact that BLM appears intent upon ignoring industry support and participation in partnership programs, direct support for resource surveys and NEPA documents that are properly BLM's responsibility, this new policy will likely severely curtail industry participation in partnership programs.

BLM is essentially establishing a new rule to require compensatory mitigation in areas it sees fit without consideration of lease rights. Moreover, it is evident that current commitments to operators with respect to APDs, rights-of-way or other projects could be modified as a result of this new policy. Contrary to FLPMA, such mitigation places more importance on aesthetic resource values over other uses, such as minerals and other commodity development. BLM must recognize that it is required to fully consider the need for mineral development along with the need for overzealous protection of other resource values and that in some cases the need for mineral development may actually outweigh the need for the protection of other resource values. As such, BLM must comport with EPCA. Namely, "public land managers [have a responsibility] to identify areas of high oil and gas potential and to evaluate the effectiveness of mitigation stipulations and conditions of approval in balancing responsible development of resources with the protection of other valuable resources in the area." [pg xxiii]

The industry coalition recommends that BLM eliminate "compensatory mitigation" from the HiLine RMP because it is bad policy, punitive, subjective and will likely lead to litigation.

AIR RESOURCE MANAGEMENT PLAN - APPENDIX

BLM's proposed management clearly exceeds its authority by attempting to control air emissions and air quality despite the regulatory boundaries included in the Clean Air Act (CAA). Under the CAA, only the Environmental Protection Agency (EPA) and its delegates have sole authority for such regulation.

Emissions Inventories

We are disturbed by the emission estimates used in the current document, as well as the intention to obtain further emissions information for use in inappropriate model evaluations. Emissions inventories are calculated in a number of different ways for a number of purposes. For example, BLM intends to require industry to calculate potential emissions to determine the applicability of the state's permitting program.

COMMENT: Industry already provides estimated annual actual emissions to the state for fee purposes. To determine valid modeling results, which conservatively estimate impacts, there must be a clear understanding of the emissions data and an accurate accounting of these emission estimates. The DEIS documents the intent of BLM to implement significant mitigation measures on individual facilities based on the results of the modeling. Without being allowed to review the emission calculations that will be used in future modeling, what options does industry have for public participation?

An example of overestimating emissions is BLM's greenhouse gas (GHG) emission estimates. BLM projects emissions higher than actually recorded because no accounting was given to existing federal regulations that require various measures to be used to reduce GHGs. Nevertheless, no significant impacts were found with overestimated GHG emissions increases from the oil and gas industry. We strongly recommend that BLM defer to reliable scientific methods to correctly project potential impacts.

MODELING

The DEIS discusses several different levels of modeling that have either been conducted or will be in the future.

AREMOD Modeling

AERMOD modeling was conducted and it was determined, even with this conservative analysis, that there will be no violations of the National Ambient Air Quality Standards (NAAQS). It is worth noting that this modeling was conducted using emission estimates that are actually higher than the Preferred Alternative. BLM went on to analyze the PSD increments. PSD increments are the amount of pollution an area is allowed to increase. It is also notable that PSD increment analysis does NOT apply in this scenario. This analysis is wholly inappropriate and is being misused. On Page 421, BLM attempts to make a clarification to this analysis by stating, "The following PSD analysis is not a regulatory analysis; its purpose is to provide context for evaluating potential air quality impacts."

COMMENT: The numbers documented in the DEIS show exceedances of PSD increments. The analysis is far from appropriate for evaluating air quality impacts and must be removed from the document. It is the responsibility of MDEQ to implement the PSD permitting program for major sources. It is inappropriate for BLM to apply this analysis on a wide scale using these extreme estimates because they produce false results that some may believe are real potential impacts. This is an unsuitable use of this analysis process and is very misleading to all interested parties. Also, under any and all alternative scenarios, BLM concludes that current levels and any future potential increases in emissions are expected to comply with the NAAQS and MAAQS. We recommend that BLM revise its approach in the revised DEIS and subsequent Record of Decision (ROD).

Future Modeling Photochemical Grid Modeling and CALPUFF

Page 424 – *"As described in the ARMP in Appendix B, the BLM is actively acquiring needed data to perform PGM, which is expected to be completed after this RMP is complete."*

Page 425 – *"The CALPUFF modeling effort would include estimated emissions from BLM-authorized oil and gas activities. This modeling would be completed prior to publication of the Final RMP/EIS."*

COMMENT: Both of these projects are being conducted outside of BLM's jurisdiction. Additionally, there is no indication that BLM will afford the public an opportunity to review and comment upon these future actions. We are extremely concerned that the oil and gas industry will be impacted by the results of these emission inventories and modeling exercises in the form of potential mitigation measures being imposed on lease agreements for individual operations. Again, the DEIS mentions collaboration with AQTW and MDEQ on modeling protocol development for the future modeling; however, there is no mention of seeking industry involvement in this process. There is mention of making results available to the public, but no mention of public participation in determining the methods of conducting the modeling. We strongly urge BLM to involve the affected parties, in particular the oil and gas industry, in future modeling efforts.

While not clearly documented, it is our understanding that the 2011 emission inventory, that was completed outside of the DEIS, is going to be extrapolated to 2015 with BLM's "understanding" of what new sources are or will be in existence. We acknowledge that BLM expects additional sources by 2015. However, any emissions estimates must take into account the amount of electrification occurring. Additionally, gas sales on the upstream side of industry are expected to increase significantly as pipeline availability increases. For example, within the last year industry has electrified hundreds of oil and gas wells and, as a result, no longer has natural gas lifting engines or gasoline-fired recycle pump engines. Furthermore, more gas is being sold from sites as the natural gas pipeline/processing infrastructure has been expanding, thus "actual" flaring data clearly would not be representative to use in extrapolating for future predictions. The DEIS must also take into account the reduction in emissions associated with the New Source Performance Standards (NSPS) and the National Emission Standards for Hazardous Air Pollutants (NESHAP) 1 also known as Maximum Achievable Control Technology (MACT) standards. Implementation of these regulations will reduce emissions in the planning area. All of these items lead to considerable concern about BLM's ability to accurately estimate emissions, and thus ambient impacts and we strongly urge BLM to reconsider its proposal.

MONITORING

Page 421 - *"Due to the relatively low density of expected oil and gas activity in most of the HiLine, far-field criteria air pollutant concentrations are expected to remain low."*

Page 424 - *"Qualitative assessments of far-field air resource impacts for additional criteria air pollutants are provided below."...*

COMMENT: Based on monitoring data from Sidney, MT, the qualitative analysis demonstrates expected compliance with the NAAQS. MDEQ is now operating two new air quality monitoring stations in Malta and Lewistown, MT. These sites will confirm the areas' compliance with the NAAQS. Consequently, we strongly object to the agency's use of any newly created "mitigation design value." Since MDEQ already has an approved program along with the requisite expertise to handle the calculations of an appropriate design value, why does BLM feel compelled to develop a separate program? Moreover, the Clean Air Act has already established extensive actions based on actual scientific monitoring data. BLM should only use approved design values prior to implementing mitigation measures on sources in the planning area.

MITIGATION MEASURES

Page 425 - BLM acknowledges that the planning area is an area of "good" air quality and states that it intends to use both monitoring and modeling data to "identify mitigation measures to address unacceptable impacts"

COMMENT: We are disturbed that BLM has not included a definition as to what it believes constitutes "good" air quality and what "unacceptable impacts" would be. As such, it is impossible

to provide comments in any knowledgeable fashion when these terms are undefined and the information used to make these decisions has not been publically vetted.

Page 426 - *"The adaptive management strategy for oil and gas resources provides the flexibility to respond to changing conditions that could not have been predicted during RMP development. The strategy also allows for the use of new technology and methods that may minimize or reduce impacts."*

COMMENT: This vaguely defined strategy leaves a great deal of uncertainty for the industry in planning development when there is no guarantee, even after they have followed all air quality regulations applied through MDEQ to comply with both the Federal and State Clean Air Act(s), that there will not be further mitigation measures placed on individual minor sources.

The DEIS has a number of initial mitigations that will require implementation measures upon signature of the ROD. Several of the measures deal with fugitive dust control. While the industry believes fugitives should be controlled, adherence to state requirements for reasonable precautions (Administrative Rule of Montana 17.8.308) already meets the objectives for these measures, is already required for all sources, and allows the facility flexibility in choosing measures used to comply. Therefore, we recommend eliminating these measures because they are duplicative and unwarranted.

Page 418 – *"Emissions inventory estimates were determined based on state and federal emission standards with one exception. Emission estimates for diesel drill rig engines are based on the use of Tier 4 non-road engine standards, which would be required by BLM as an initial mitigation measure."*

COMMENT: The state operates an EPA approved air quality program, and as it has been demonstrated, the planning areas have no concerns with air quality. As a result, the requirement to implement Tier 4 engines is unwarranted because it transcends current statutory requirements.

There is discussion in the initial mitigation measures that sources will be required to consolidate facilities to reduce fugitive emissions. However, these consolidation determinations are either redundant or overly restrictive for the control of fugitive emissions, since emissions are successfully mitigated through existing regulations. Once again, BLM would exceed its authority.

We object that BLM intends to surpass both federal and state regulations by requiring compliance with a New Source Performance Standard (NSPS) on sources for which that rule is not applicable. What is BLM's justification for exceeding established programs? The NSPS standards were adopted nationally after considerable research and public participation. It is inappropriate for this requirement to be capriciously applied to sources where it is not applicable.

As noted above, BLM is basing mitigation measures on emissions estimates and modeling that are inappropriate for this level of control. The DEIS claims that, with regard to oil and gas emission sources, emissions were estimated conservatively because they do not include more stringent

emission controls mandated by USEPA on August 16, 2012, which become effective prior to final issuance of the DEIS.

While the "Monitoring-Based Mitigation" process is seemingly a very deliberate process to determine cause or contribution, the potential enhanced mitigation measures to be imposed are nothing short of excessive in light of that fact that the determination is made based on a single source contribution of a single exceedance at a single monitor. A single exceedance, even if the data is valid, certainly does not constitute a violation of the standard and may not even be indicative of a trend or pattern. The potential enhanced mitigation measures themselves are uncompromising and in only one case may the possibility exist that BLM will take into account technical and economic feasibility. Also, the DEIS states that BLM can decide on any additional measures it chooses. Again, this is done with no involvement with the public or the regulated industry and is based simply upon a single exceedance at a single monitor. The "Determination of Enhanced Mitigation Measures after Photochemical Grid Modeling Completion" section determines potential enhanced mitigation measure implementation based on reaching 85% of the design value. However, it does not state any process in determining which facilities this will apply to.

AIR QUALITY RELATED VALUES (AQRV) ANALYSIS

Page 424 - The DEIS discusses the fact that AQRV analysis will be fully conducted using the CALPUFF and PGM modeling results.

COMMENT: We object that there is no opportunity afforded to the public to comment on this analysis and are concerned that potential mitigations will be imposed based on the outcome of the analysis.

RIGHTS-OF-WAY

Page 63, Chapter 2 – *"The BLM would designate 19 avoidance areas for the issuance of rights-of-way on 1,672,698 acres... A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area."*

COMMENT: We object that BLM proposes in the Preferred Alternative to place 1.7 million acres in a right-of-way avoidance classification because it would effectively prevent infrastructure improvements needed for transportation of oil and gas resources. BLM must recognize that fluid mineral pipelines, for example, create only short-term disturbance and are fully reclaimed within the parameters BLM requires once construction is completed. We support, however, the flexibility BLM has adopted to allow a right-of-way to be built in the event no reasonable alternative is found. Nevertheless, the DEIS fails to explain what types of special mitigation measures may be required to protect sensitive resource values. BLM needs to provide direction as to the types of mitigation it would consider effective rather than leaving such decisions opened ended and solely in the realm of a Natural Resource Specialist.

FISH, WILDLIFE, AND SPECIAL STATUS SPECIES

The species habitat delineations in the RMP/DEIS are wholly inconsistent with those identified by the Montana Department of Fish, Wildlife & Parks (MFWP). We ask BLM to explain these discrepancies in the final planning document, particularly due to the fact that the State manages most of the species for which habitat is identified. Such discrepancies are highly problematic for operators who work on both State and private lands that may be adjacent to public lands because two separate processes could be required for the same project in circumstances where projects cross jurisdictional boundaries. We strongly recommend that BLM work closely with State agencies to eliminate the discrepancies in wildlife data and spatial representations utilized by BLM in the draft planning documents.

NSO Stipulations, Timing Limitations, and other Restrictions for Species in Alternative B

COMMENT: The proposed closures to future oil and gas leasing as well as restrictions for surface-disturbing activities, NSO stipulations, and timing limitations for development with respect to several wildlife and plant species under Alternative B throughout Chapter 2 are unreasonable and unjustified in the DEIS. Incorporating any of the restrictions from Alternative B, particularly the closures of over 3.1 million acres to future oil and gas leasing, into the proposed alternative will unnecessarily preclude, prevent, and delay oil and gas development and other responsible multiple users from economic activities on millions of acres in the planning area.

Species and Habitat Maps

COMMENT: While the NSO, CSU, and TLS for fish and wildlife species may have been aggregated in Map 2.4 "Fluid Mineral Leasing Stipulations for Future Leasing" (Alternative E – Preferred), BLM failed to separately map the habitat areas with associated management restrictions for several species. It is crucial for BLM to map habitat areas that may or may not include restrictions and management prescriptions separately from maps that illustrate the overall restrictions on future fluid mineral leasing. Therefore, we strongly recommend that BLM provide habitat maps which show land-use restrictions, including special management areas for all species discussed in Chapter 2 of the DEIS.

Mountain Plover

Page 4-501 - *"Lands that have been identified as mountain plover habitat would be stipulated as NSO. This would affect 285,170 acres, of which 2,144 acres (1%) are already leased. Additionally, a timing stipulation would be stipulated for areas within 1/4 mile of mountain plover habitat. This would affect an additional 23,186 acres, of which 346 acres (1%) are already leased."*

Page 2-223 - Mountain Plover ACEC - *"The ACEC would be closed to oil and gas leasing which would avoid any impacts from oil and gas exploration and development."*

COMMENT: BLM has no scientific basis to preclude or severely restrict leasing in identified mountain plover habitat through the designation of the "Mountain Plover ACEC." In May 2011, the US Fish and Wildlife Service (FWS) determined that listing the mountain plover under the ESA was

not warranted, estimating that "the current mountain plover breeding population to be over 20,000 birds, more than double the estimate cited in [its] 2002 proposal."[1] In addition, the Service concluded that *"despite the prevalence of energy development activities throughout the range of the mountain plover, there is little evidence as to whether, or to what extent, the overall effects of energy development are detrimental to mountain plover (Andres and Stone 2009, p. 25). Although oil and gas field development modifies and fragments nesting, brood rearing, and foraging habitats, mountain plover continue to use these areas (Smith and Keinath 2004, p. 36; Carr, in review)" 76 FR 27782.* Prohibiting fluid mineral leasing or adding NSO stipulations to well over 300,000 acres in the planning area does fails to correspond with the FWS' listing determination for the species and is not justified through any peer-reviewed science since that decision was made. As such, the NSO stipulations proposed for oil and gas leasing in areas within mountain plover habitat is completely arbitrary and capricious and should be eliminated from the revised DEIS.

COMMENT: What is BLM's rationale in seeking to impose stipulations on all habitat areas rather than occupied habitat?

COMMENT: Language in Chapter 4 of the DEIS implies that NSO stipulations that apply to all mountain plover habitat will also apply to areas that have already been leased. We remind BLM that any stipulations for mountain plover that may be applicable for future leases may not be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms may not be consistent with valid existing lease rights.

Page 3-401 - *"Current mountain plover management is closely related to black-tailed prairie dog management in much of the planning area because of the close association of plovers and the low structure habitat created by prairie dogs."*

COMMENT: It appears that BLM attempts to justify many of the management restrictions for mountain plover in the DEIS, including NSO stipulations for future oil and gas leases, due to its close association and shared habitat with the black-tailed prairie dog. In 2009 the FWS determined that the listing of the black-tailed prairie dog under the ESA was also not warranted, and that "increasing trends in the species' occupied habitat since the early 1960s, indicates that the present or threatened curtailment of habitat due to energy development is not a limiting factor for the species in Wyoming or elsewhere throughout its range" *74 FR 63353.* In addition, the FWS found that the *"prairie dog occupancy has apparently increased within oil and gas development areas in Wyoming (Sorensen et al. 2009, pp. 5– 6)." 76 FR 27782* [Emphasis added.] Accordingly, the management restrictions proposed for oil and gas leasing and development in mountain plover habitat are completely unjustified simply due to its close association and shared habitat with the black-tailed prairie dog and should be removed from the revised DEIS.

Page 2-195 - *"TLS - Surface occupancy and use is prohibited within 1/4 mile of mountain plover habitat from April 1 through July 15."*

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[1] "Mountain Plover Factsheet." U.S. Fish & Wildlife Service. Last updated: August 2011. Available at: http://www.fws.gov/mountain-prairie/species/birds/mountainplover/

COMMENT: This restriction will result in the prohibition of surface occupancy and use on an additional 23,186 acres from April 1 through July 15. We are unable to locate in the DEIS any scientific justification that an additional ¼ buffer around mountain plover habitat, on top of already designating over 285,000 acres as NSO, is necessary to protect the species during nesting season. In addition, while BLM has mapped the Mountain Plover ACEC, the DEIS does not contain a separate map that delineates the lands identified as mountain plover habitat or the area within ¼ mile of habitat where surface occupancy will be seasonally prohibited. A new map needs to be included in the revised DEIS.

Black-Tailed Prairie Dog

Page 2-193, Alternative E (Preferred Alternative) - *"NSO within ¼ mile of black-tailed prairie dog habitat."*

COMMENT: BLM has failed to present any supporting data to justify the management restrictions for the black-tailed prairie dog in the DEIS, particularly the NSO stipulation within ¼ mile of habitat. Moreover, this stipulation does not correspond with the FWS' recent listing determination for the species and its conclusions about the impact of oil and gas development on black-tailed prairie dog habitat. In 2009 the FWS determined that the listing of the black-tailed prairie dog under the ESA was not warranted and that "increasing trends in the species' occupied habitat since the early 1960s, indicates that the present or threatened curtailment of habitat due to energy development is not a limiting factor for the species in Wyoming or elsewhere throughout its range" *74 FR 63353*. In addition, the FWS has found that the "prairie dog occupancy has apparently increased within oil and gas development areas in Wyoming (Sorensen *et al.* 2009, pp. 5– 6)." *76 FR 27782*. Accordingly, we recommend that BLM eliminate the proposed NSO stipulation for oil and gas leasing within ¼ mile of black-tailed prairie dog in a revised DEIS to maintain consistency with the FWS' findings.

COMMENT: What is BLM's rationale in seeking to impose stipulations on all habitat areas rather than occupied habitat?

Page 4-730 - *"Alternative E would eliminate the Prairie Dog Towns within the 7km Complex ACEC for black-tailed prairie dogs. The impacts to black-tailed prairie dogs because of this change are not apparent because all prairie dog towns in the planning area are now afforded similar protections as those in this ACEC, negating the need for special management for a subset of the prairie dogs located in the Prairie Dog Towns within the 7km Complex ACEC."*

COMMENT: We object to BLM's decision to ease restrictions for black-tailed prairie dogs in the 7km Complex ACEC by dramatically increasing restrictions, particularly those for oil and gas development, across the entire planning area. This 'one size fits all' management approach fails to correspond with the FWS' view recent not-warranted listing determination and its findings regarding the impact of oil and gas development on the species' habit, and will unnecessarily delay, preclude, or prevent responsible oil and natural gas development without commensurate benefit to the species across the planning area.

Vegetation - Special Status Plants

Page 2- 139 - *"Through activity plans for other resources (e.g., watershed plans, fire management plans, allotment management plans, etc.) the BLM will design site-specific management prescriptions and projects to benefit individual species habitats and communities. Special status plants will be monitored to assess their condition and trend."*

Page 2-190 - All Alternatives: *"Site-specific prescriptions may include avoidance of special status plant habitat for ROWs, seasonal timing restrictions for grazing (e.g., limited to no grazing during flowering to seed set for a particular species), no salt or water placement within 0.25 miles of a known special status plant species population, seed collection or transplanting of special status plant species for mitigation."*

COMMENT: The management prescriptions for special status plants are unacceptably vague in the DEIS. Furthermore, BLM has, once again, failed to map the locations of special status plants in the planning area. Consequently, it is impossible to fully understand how those prescriptions may affect oil and natural gas development in areas with special status plants. We ask BLM to fully explain any management actions or restrictions that will be prescribed for activities in areas with special status plants, address how those restrictions will affect other resource uses in the planning area, and adequately map those areas in a revised DEIS.

Bald Eagle

Page 2-192, Alternative E - *"NSO within ½ mile of bald eagle nest sites active within the preceding 5 breeding seasons."*

COMMENT: BLM presents no scientific justification for designating areas that are within ½ mile of the active nests of bald eagles as NSO. The species was recently removed from the threatened and endangered list and these buffers significantly exceed the FWS's recommended restrictions for oil and gas activities around nests, which call for 200 meter (660 feet) buffers. Accordingly, this ½ mile buffer is unwarranted and must be revised to comport with FWS recommendations in a revised DEIS.

COMMENT: What is the scientific justification for a nest considered to be "active" if it has been used in the past five breeding seasons? Without a clear explanation for the five season "active" definition, this restriction is unreasonable and arbitrary. For example, if a nest was used in the past four breeding seasons prior to a proposed surface disturbance and has not been used since, it is reasonable to assume that the nest either has been abandoned or no longer contains the resource values to attract bald eagles. Yet it will still be considered "active" by BLM and would trigger the stipulations and restrictions identified in Chapter 2, even though the nest may never be "active" again.

BLM has failed to identify which nests within the planning area have been active within the past five breeding seasons and it is unclear whether the burden to demonstrate that a nest has or has not been active falls on the operator or the BLM. In order to demonstrate that habitat can be maintained so that bald eagles are not precluded from using nest sites, operators must have a well-

defined understanding of the location of active nests and adequate justification that they have been in fact active sometime in the recent past. In addition, BLM has failed to map active or inactive nests for bald eagles in the map section of Chapter 2 in the DEIS.

Specifically, BLM must explain and justify the methodology used to define a nest as "active" in order to use the proposed timeline in surface use restrictions for future oil and gas leases. If BLM ultimately decides that the standard by which a nest will be considered "active" is use within the last five breeding seasons or some other period of time, the agency must also clearly identify nest sites that have been inactive within the past five breeding seasons or some other period of time and clearly note that they will not be subject to the surface disturbing and disruptive activities and lease stipulations identified in Chapter 2. It is important for BLM to plainly identify and map active and inactive bald eagles nests in a revised DEIS.

We also remind BLM that any NSO stipulations for bald eagles that may be applicable for future leases may not be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms will abrogate valid existing lease rights.

Pallid Sturgeon

Pages 2-196, Alternative E - *"CSU - Prior to surface-disturbing or disruptive activities occurring in or within 1/2 mile of river or stream shorelines identified as pallid sturgeon habitat, a plan to maintain pallid sturgeon habitat would be prepared by the proponent and implemented upon approval by the authorized officer."*

COMMENT: It is not explained in the DEIS whether the recommended ½ mile CSU buffer was suggested by the FWS or devised by BLM. BLM must disclose in a revised DEIS the scientific justification for the proposed CSU stipulation, either through reference to a recommendation by FWS or some other scientific justification. We also encourage BLM to regularly work and consult with the FWS to determine if portions of the stipulated area are no longer critical to the pallid sturgeon and may be modified. BLM must also clearly identify and map pallid sturgeon habitat in the maps section of the revised DEIS.

Big Game Crucial Winter Range

Pages 2-193, Alternative E - *"Surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity."*

COMMENT: BLM must explain the logic behind prohibiting or restricting new surface-disturbing or disruptive activities within 0.6 miles from existing surface-disturbing or disruptive activities within big game crucial winter range. Prohibiting additional disturbances within 0.6 of oil and gas infrastructure and wells, whether they are existing and producing, or are being drilled, completed, or maintained, may prevent the construction of additional infrastructure, pipelines, roads, or other equipment needed to bring important energy resources to consumers, which may ultimately shut in that resource and/or compromise valid existing lease rights. Further, by restricting or prohibiting

these activities within 0.6 miles of existing surface disturbing activities, BLM may actually increase the overall amount of surface disturbance within crucial winter range. Accordingly, we recommend that BLM remove this provision from the CSU stipulations for crucial winter range as proposed under the preferred alternative. If BLM does decide to move forward with this provision, the RMP/EIS must clearly define what constitutes an 'existing surface-disturbing or disruptive activity' and whether BLM will consider a completed and producing oil or gas well and other infrastructure as an existing surface-disturbing activity.

Big Horn Sheep

Page 4-500 - *"Lands that have been identified as bighorn sheep habitat would be stipulated as CSU. This would affect 7,792 acres, of which 1,248 acres (16%) are already leased. Lands that have been identified as bighorn sheep lambing areas would be stipulated as NSO. This would affect 2,364 acres, of which 343 acres (15%) are already leased."*

COMMENT: Language in Chapter 4 of the DEIS implies that CSU stipulations that apply to bighorn sheep habitat will also apply to areas that have already been leased. We remind BLM that any stipulations for bighorn sheep habitat that may be applicable for future leases cannot be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms will abrogate valid existing lease rights.

Page 2-192, Alternative D – *"TLS - Surface occupancy and use is prohibited within bighorn sheep lambing areas from May 1 through June 30."*

COMMENT: We are puzzled as to why BLM has opted to designate bighorn sheep lambing areas as NSO in the preferred alternative, rather than the seasonal timing limitations as proposed in Alternative D. BLM has provided no evidence that a year-round NSO stipulation is necessary, nor has it indicated that these areas require further protection than the seasonal prohibition of use from May 1 through June 30. Accordingly, we recommend that the preferred alternative reflect the proposed TLS as proposed in Alternative D in the revised DEIS.

Black-footed Ferret

Page 2-192 - *"NSO within 1/4 mile of black-footed ferret habitat."*

COMMENT: We have been unable to determine in the DEIS whether the recommended ¼ mile NSO buffer around black-footed ferret habitat has been suggested by the FWS or devised by the agency. It is necessary for BLM to disclose the scientific justification for the proposed NSO stipulation, either through a reference to a recommendation by FWS or by some other justification. We also encourage BLM to regularly work and consult with the FWS to determine if portions of the stipulated area are no longer critical to the black-footed ferret and may be modified. BLM must also clearly map black-footed ferret habitat in the maps section of Chapter 2 in a revised DEIS.

Piping Plover and Interior Least Tern

Page 2-196, Alternative E - *"NSO within 1/4 mile of piping plover habitat."*

Page 2-195, Alternative E - *"NSO within 1/4 mile of interior least tern occupied habitat."*

COMMENT: BLM has failed to demonstrate why the NSO stipulation for Interior Least Tern will apply to *occupied* habitat while the NSO stipulation for Piping Plover will apply to all habitat areas. Applying NSO stipulations to all piping plover habitat, rather than just occupied habitat, has not been justified in Chapters 3 or 4 by any reference to guidance from the FWS. Management restrictions for the Interior Least Tern should be consistent with those for the Piping Plover unless BLM can cite recommended guidance from FWS that justifies the more restrictive management prescriptions for Interior Least Tern in the DEIS. In order to avoid the unfounded application of stipulations to areas that may not truly contain occupied habitat, we recommend that BLM apply stipulations for occupied habitat for both species. Accordingly, BLM must clearly identify and map Interior Least Tern and Piping Plover occupied habitat in the maps section of the revised DEIS.

Raptors and Peregrine Falcons

Page 2-196, Alternative E - *"NSO within 1 mile of peregrine falcon nests active within the preceding 7 breeding seasons."*

Page 2-196, Alternative E - *"NSO within ¼ mile of raptor nests active within the preceding 7 breeding seasons."*

COMMENT: BLM intends to designate as NSO areas that are within 1 mile of the active nests of peregrine falcons and within ¼ mile of raptors. These buffers significantly exceed the FWS's recommended restrictions for oil and gas activities around nests, which call for 200 meter (660 feet) buffers. Accordingly, these 1 and ¼ mile buffers are capricious and have not been justified in the DEIS. We recommend that BLM comport with FWS' NSO restrictions for special status eagles and raptors. Accordingly, the buffers in the final plan must be consistent with the FWS' recommendation of 200 meters (660 feet) around nests.

COMMENT: What is the scientific justification for a nest considered to be "active" if it has been used in the past seven breeding seasons? Without a clear explanation for the seven season "active" definition, this restriction is unreasonable and arbitrary. For example, if a nest was used in the past six breeding seasons prior to a proposed surface disturbance and has not been used since, it is reasonable to assume that the nest either has been abandoned or no longer contains the resource values to attract peregrine falcons and raptors. Yet it will still be considered "active" by BLM and would trigger the stipulations and restrictions identified in Chapter 2, even though the nest may never be "active" again.

In addition, BLM has failed to identify which nests within the planning area have been active within the past seven breeding seasons. It is also unclear whether the burden to demonstrate that a nest has or has not been active falls on the operator or the BLM. In order to demonstrate that habitat can be maintained so that peregrine falcons and raptors are not precluded from using nest sites,

operators must have a well-defined understanding of the location of active nests and adequate justification that they have been in fact active sometime in the recent past. Once again, BLM has failed to map active or inactive nests for peregrine falcons and raptors in the map section of Chapter 2 in the DEIS.

BLM must clearly explain and justify the methodology used to define a nest as "active" in order to use the proposed timeline in surface use restrictions and CSU stipulations for future oil and gas leases. If BLM ultimately decides that the standard by which a nest will be considered "active" is use within the last seven breeding seasons or some other period of time, the agency must explicitly state that nest sites that have been inactive within the past seven breeding seasons or some other period of time will not be subject to the surface disturbing and disruptive activities and lease stipulations identified in Chapter 2. BLM must also clearly identify and map active and inactive nests for raptors and peregrine falcons in the revised DEIS.

We also remind BLM that any NSO stipulations for raptors or peregrine falcons that may be applicable for future leases may not be imposed on valid existing leases simply because a plan amendment has been prepared. Further, restrictions on surface-disturbing and disruptive activities that are inconsistent with the original lease terms will abrogate valid existing lease rights.

Mitigation Trust Account

Appendix E.5, page 973, *"The creation of a "Mitigation Trust Account" when impacts cannot be avoided, minimized, or effectively mitigated through other means. If approved by the BLM, the proponent may contribute funding to maintain habitat function based on the estimated cost of habitat treatments or other mitigation needed to maintain the functions of impacted habitats."*

COMMENT: We have mixed reactions to the creation of a "Mitigation Trust Account" under the proposed wildlife CSU stipulations. BLM needs to provide additional details about the scope, proposed use, per dollar mitigation ratio that would be sought, potential limitations, and general utility of such a fund in the revised DEIS. Further, we request BLM to clearly define the regulatory assurances that will be provided to a project proponent that contributes to the mitigation trust account in circumstances when impacts cannot be avoided, minimized, or effectively mitigated through other means. Without a clear definition of these assurances, as well as the per dollar mitigation ratio, operators may not consider contributing to the trust account even when impacts cannot be otherwise avoided, minimized, or effectively mitigated.

CULTURAL RESOURCES

Cultural resource sites vary widely in quality of preservation, size, and density relative to a geographic area, contemporary cultural importance, and scientific value. While recognizing that prehistoric and historic sites are a finite resource, their management must also be afforded a level of flexibility and discretion as dictated by site analysis, and the mitigation measures employed to protect discrete sites must therefore vary according to their scientific or contemporary cultural significance. Prior general knowledge as to how these mitigation measures might be employed is

vital to planning purposes for other land uses. Therefore, it is crucial for BLM to establish detailed parameters for inclusion in the revised DEIS.

Traditional Cultural Properties (Leasing within TCPs) – The DEIS notes the preexistence of two Traditional Cultural Properties (TCPs): The Little Rocky Mountains TCP (30,648 acres) and the Sweet Grass Hills TCP (7,718 acres). Chapter 2, pages 30-32 discusses the variances among the alternatives for oil and natural gas leasing within these areas.

COMMENT: Properties identified as Traditional Use include those that are important to and still used by contemporary native populations for maintaining cultural identity, spiritual purposes, and other similar uses. For this reason, these designated TCPs have, in every alternative except the Preferred Alternative (Alternative E), No Surface Occupancy (NSO) stipulations for oil and natural gas leasing. The Preferred Alternative proposes to exclude nearly the entire Little Rocky Mountain TCP and all of the Sweet Grass Hills TCP from leasing eligibility. However, BLM failed to clarify why the Preferred Alternative drastically varied from each of the other alternatives in this regard. Chapter 2, page 26 indicates that BLM will consult with the tribes to determine if specific actions will adversely affect areas of high cultural/spiritual importance. If the preferred alternative's direction is the result of such consultation, why is it the only alternative in the DEIS to impose such a restrictive approach? If the proposed management is not the result of consultation with the tribes, it makes more sense for individualized measures to be formulated on a site-specific, case-by-case basis in consultation with the tribes to mitigate adverse any possible impacts to areas of significant cultural importance.

Chapter 2, pages 199 & 200, Table 2.22 Cultural Resources (Fluid Minerals) – A cross-reference of the acreage open for fluid mineral leasing and stipulations for development regarding cultural resources is needed. At one extreme, Alternative B proposes to close 3,173,637 acres, or roughly three-fourths of the entire planning area to fluid mineral leasing. The Preferred Alternative purports to significantly reduce the amount of acreage off limits to leasing, with 152,702 acres falling under the prohibition, yet it places an NSO stipulation on 1,711,378 acres (2,674 $mi.^2$).

COMMENT: Avoiding surface disturbance may certainly be warranted in some cases, but the Preferred Alternative's default preference for an NSO stipulation on so many acres fails to account for the variability among sites and provides little opportunity for flexible management solutions. While the acreage in question would be open for leasing in theory, in practicality such widespread NSO requirements place large swaths of resource technologically out of reach. Furthermore, cultural resources enjoy statutory protection by many federal and state laws. Section 106 of the National Historic Preservation Act already outlines an effective process whereby cultural resource sites may be identified, assessed, and strategies effected to mitigate impacts from other uses. Further still, as pointed out previously in these comments, BLM is statutorily required to utilize the least restrictive stipulations. Given this mandate and the processes already in place to protect cultural resources, we find no justification for BLM to resort to the most restrictive stipulation available for such a large proportion of the acreage in the planning area and ask for clarification in the revised DEIS.

Chapter 4, pages 489 – 502 (Retroactive Stipulations of Fluid Minerals) – The DEIS lists various surface use stipulations under Alternatives B through E to be applied for the protection of cultural resources. The document indicates the amount of acreage currently under lease that would be affected by any newly adopted stipulations.

COMMENT: Subject to the requirements of existing federal and state law protecting various cultural and historic resources, the FLPMA, the MLA, and BLM Planning Handbook 1600 all prohibit BLM from imposing new restrictions on existing lease holdings. Leases issued under one management regime may not be altered by the introduction of new management regimes or amendments to existing management plans. Nor can BLM impose mitigation measures that exceed the requirements outlined in existing leases. The integrity of valid existing rights for mineral leases must be maintained as any other private property right must be.

Appendix E, Page 897 (Cultural Resource Inventories) - The DEIS states that prior to any surface disturbing activities an inventory may be required to determine the presence of cultural resources and to identify any necessary mitigation measures to protect the resources.

COMMENT: We recognize that proper surveys are necessary to ensure compliance with the various federal statutes addressing cultural resource protection. We encourage BLM to provide assurances in the revised DEIS that these surveys will be considered expeditiously so as not to unnecessarily delay the ability of mineral lease holders to develop oil and natural gas resources.

PALEONTOLOGICAL RESOURCES

Similar to cultural, paleontological resources also widely vary in both density and scientific value. While many fossil remains are widespread and well-studied, others may be rare and poorly understood. Numerous resources undoubtedly remain undiscovered and may be of high scientific value. Management of this resource concurrently with others requires the ability to assess the fossil resources present and make common sense discretionary management decisions accordingly.

Chapter 4, pages 489 – 502 (Retroactive Stipulations on Fluid Minerals) – The DEIS lists various surface use stipulations under Alternatives B through E, including NSOs and CSUs, to be applied for the protection of paleontological resources. The document indicates the amount of acreage currently under lease that would be affected by any newly adopted stipulations.

COMMENT: FLPMA, MLA and BLM's Planning Handbook 1600 all prohibit BLM from imposing new restriction on existing lease holdings. Leases issued under one management regime may not be altered by the introduction of new management regimes or amendments to existing management plans. Nor can BLM impose mitigation measures that exceed the requirements outlined in existing leases. The integrity of valid existing rights for mineral leases must be maintained even as any other private property right must be.

Appendix E, Page 899 (Inadvertent Discovery) – *"Upon the discovery of significant fossil resources during the course of operations, all activity shall cease until an assessment of the fossil resource can be made and stabilization or recovery of the resource can be accomplished."*

COMMENT: If, during the course of operations, a significant fossil discovery is made, we encourage BLM to provide assurances that any requisite mitigation measures be completed expeditiously so as not to unnecessarily delay the ability of mineral lease holders to develop oil and natural gas resources.

Appendix E, page 918 (Paleontological Resource Inventory) – The DEIS states that prior to any surface disturbing activities in areas classified as Class IV and V of the Potential Fossil Yield inventory system, an inventory for paleontological resources will be required.

COMMENT: We recognize that proper surveys are necessary to ensure protection of scientifically valuable paleontological resources. We encourage BLM to provide assurances that these surveys will be considered expeditiously so as not to unnecessarily delay the ability of mineral lease holders to develop oil and natural gas resources.

VISUAL RESOURCES

Chapter 2, Table 2.19, page 141 (Visual Resource Management Classification) – The DEIS indicates similar acreages for Alternatives B, C, D, and E (preferred) for Visual Resource Management (VRM) classes I and III, with B, C, and E being similar in total acreage for Class II, and Alternative D with a larger total of Class IV. Chapter 4, page 644 indicates that BLM would rely on the high amount of acreage under NSO stipulation in the Preferred Alternative to meet the requirements of Class I and II VRM.

COMMENT: We urge BLM to consider the temporary nature of much of the infrastructure and surface disturbance associated with oil and natural gas development when assessing impacts to visual resources. Over the life of a well, which may be several decades, surface impacts on the front end, including the drill rig, the initial well pad, and mobile equipment are removed after several weeks and are reclaimed to reduce the overall footprint. In the case of a gas well, relatively inconspicuous well heads and smaller roads for maintenance access may remain before final reclamation occurs. For oil wells, resource recovery enhancers like pump jacks may be in place, but are also not permanent structures. Best Management Practices (BMPs) may be employed to site and camouflage equipment and access infrastructure to minimize the impact to visual resources. Appendix E, page 902 states, "*When it can be used, site selection can be critical (as is color choice) in reducing the contrast of a pumpjack unit.*" We support the use of discretionary decision-making to account for the unique circumstances of each discrete site. Reliance on vast swaths of NSO stipulations to protect resources, including visual resources (as BLM indicates is its management strategy for the Preferred Alternative) eliminates the ability of BLM field staff to work with industry to craft solutions unique to each locale to facilitate access to natural resources and simultaneously protect other valuable resources in the process, and we oppose BLM's proposal to utilize such widespread use of NSO stipulations and recommend changes be made in the revised DEIS.

GREATER SAGE-GROUSE

The NTT Report is not supported by the Western Association of Fish and Wildlife Agencies (WAFWA) as BLM's sole source of Sage-grouse management direction. In a letter sent to the Interior Secretary on May 16, 2013 WAFWA member states made it clear that they never endorsed the sole use of the NTT or any other scientific publication. Rather, they believe that a variety of peer-reviewed publications which collectively provide the best available science for sage-grouse should have been used by BLM as the basis for conserving the Sage-grouse, thereby avoiding a listing under the Endangered Species Act (ESA). WAFWA went on to recommend that management and regulatory mechanisms be based upon the best available science which would provide the best strategy for near- and long-term management of sage-grouse and provides the best opportunity for precluding the need to list the species under the ESA.

Additionally, the Northwest Mining Association (NWMA) recently published a report *"BLM's NTT Report: Best Available Science or a Tool to Support a Pre-Determined Outcome?"* alleging that BLM failed to use best available science, ignored existing regulatory tools and adopted a pre-decisional Greater Sage-Grouse Conservation Policy. We share this view. The NWMA report questions the appropriateness of the NTT Report, because the USFWS' "warranted-but precluded" determination was based upon the conservation measures already contained in BLM Manual 6840 - Special Status Species Management. Moreover, the USFWS concluded that BLM needed to properly and consistently implement Manual 6840 in its Resource Management Plans and provide sufficient monitoring data to demonstrate the effectiveness of the resulting conservation measures.

Another major fundamental concern the signatories to this letter wish to raise is the inherent flaw in BLM's basic assumptions, due in part to the flawed recommendations contained in the NTT report, which fail to recognize that the level of disturbance associated with a well is not a constant throughout its life. The highest level of surface disturbance associated with oil and gas development occurs primarily during the construction, drilling and completion phases, which can last a little as a day or two up to a few months, depending upon the time it takes to complete the well. Once a well goes into production, these activities subside dramatically and only regular monitoring and maintenance of the well are required. Shortly after well completion, the operator typically begins interim reclamation actions designed to partially restore any impacted habitat. This partial reclamation will remain in effect until the well has been depleted. Upon conclusion of production activity, the operator will then move forward with plugging and abandonment procedures, which also includes final reclamation that will ultimately result in full restoration of the site and its return to productive habitat.

Chapter 2 – Alternatives

Page 164 (Alternative E) – *"Even after avoiding and minimizing impacts, projects that will cause adverse impacts to resources typically require some form of compensatory mitigation. Compensatory mitigation refers to restoration, establishment, enhancement, or in certain circumstances preservation of resources for the purposes of offsetting unavoidable impacts. The BLM will determine the appropriate form and amount of compensatory mitigation required. "*

COMMENT: As pointed our previously in this letter, we strongly oppose the use of compensatory mitigation for a variety of reasons and recommend that BLM abandon this proposal. A key concern is that the parameters of the program are exceptionally vague. For example, on a project-by-project basis, how will BLM determine the appropriate form and amount of compensatory mitigation required for sage-grouse and their habitat? For each project, baseline conditions will need to be compared with post-project conditions to determine impacts to sage-grouse. Presumably, some form of monitoring would be needed to determine effects. Would monitoring be based on lek counts? If so, what mitigation measures have been shown to influence population levels based on lek counts (assuming leks reflect population levels)? If habitat losses are to be compensated, how will habitat functionality be assessed to determine losses or degradation from a project and adequate compensation for losses or degradation?

Establishment (creation) is listed as an option for compensatory mitigation. It may not be practicable to create sagebrush habitats where they do not currently exist. How would the functionality of such created habitats be evaluated for sage-grouse use and habitat value?

These measures appear to be based on the model established by the U.S. Army Corps of Engineers and EPA for wetland mitigation. To support wetland mitigation, numerous specific regulatory documents, scientific papers, and lawsuits have resulted in a complex and arcane functional assessment and mitigation methodology. The same complexity and need for specific policies and guidance would be required to implement a compensatory mitigation policy for sage-grouse and other sensitive species. At what point in the RMP process will specific information be developed to guide assessments of habitat functionality, monitoring, and compensatory mitigation for sage-grouse and other sensitive species?

Page 165 – *"Because of some site-specific circumstances, some mitigation measures may not apply to some activities (e.g., a resource or conflict is not present on a given site) and/or may require slight variations from what is described in Appendix M. Proposed variations will be addressed as site-specific mitigation applied in the permitting process. All variations in mitigation and conservation actions will require appropriate analysis and disclosure as part of activity authorization. It is anticipated that variations in the mitigation measures and conservation actions will be approved in very limited circumstances and only in coordination with state wildlife agencies. Mitigation measures selected for implementation will be identified in the Record of Decision (ROD) or Decision Record (DR). "*

COMMENT: This statement is confusing. Does it mean that some mitigation measures as described in Appendix M would not be implemented if a resource or conflict is not present on a given site? The paragraph goes on to state that mitigation measures selected for implementation will be identified in a Record of Decision or Decision Record. If a resource or resource use conflict is not present on a given site, why would mitigation be required and addressed in a ROD or DR? Also, this approach fails to take into account the site-specific conditions of an area and would impose blanket requirements without proper justification.

Appendix M appears to provide "guidelines"; however, references in the text of the DEIS imply that the mitigation measures in Appendix M are requirements. This highly is problematic as there are conflicting statements regarding disturbance buffers around grouse leks (see later comments).

Chapter 3 - Affected Environment

COMMENT: Throughout the Affected Environment discussion regarding sage-grouse, much of the information presented is based on studies of Sage Grouse Management Zone 1 (MZ1), which includes northeastern Wyoming and far western North and South Dakota. This broader scale may or may not be directly applicable to the HiLine planning area. BLM needs to clearly specify the current situation in the HiLine planning area consistent with the direction provided on Page 241. Individual comments along this same vein are made below reflecting this concern as it applies to specific topics. Although analysis of MZ1 would be appropriate as a study area for analysis of cumulative impacts to sage-grouse (see comments directed to Cumulative Effects below), potential direct and indirect impacts to sage-grouse and sage-grouse habitat resulting from implementation of the RMP must address only those conditions and potential direct and indirect impacts specific to the HiLine planning area.

Page 397 – *"In 2000, the Montana Sage-Grouse Working Group was formed to develop a statewide, multi-agency strategy for the conservation of the greater sage-grouse. This group prepared the Management Plan and Conservation Strategies for Sage-Grouse in Montana – Final (MSGWG2005) to provide for coordinated management and direction across the state. In 2004, local greater sage-grouse working groups were formed to develop and implement local conservation plans. The only working group in the planning area is located in Glasgow and the BLM participates with this group. The area covered by this group includes much of the BLM land in Phillips and Valley Counties."*

COMMENT: Under Executive Order No. 2-2013, Montana Governor Bullock mandated the establishment of a Greater Sage-grouse Habitat Conservation Advisory Council with a stated purpose *"to gather information, furnish advice, and provide to the Governor recommendations on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the Endangered Species Act (ESA), by no later than January 31, 2014."*

Will this advisory council supplant the Montana Sage Grouse Working Group (and/or local working groups) or will these groups continue to address sage-grouse management? In addition, please clarify BLM's anticipated role in recognizing and/or adopting recommendations of the advisory council as part of revisions to the DEIS.

Building off the general comment above, the discussion of sage-grouse under subheading "Greater Sage-Grouse Management Zone 1" does not explain the management relationship between the HiLine planning area and Greater Sage-Grouse MZ1. It is not clear how descriptions of current conditions in MZ1 relate to conditions in the (smaller) HiLine planning area and how the conditions in the HiLine planning area will be affected by the proposed actions. For example, Cropland currently cover (sic) 19% of the MZ and 91% of the MZ is within 6.9 km of cropland (Knick et al 2011).

What are comparable percentages for the HiLine planning area and what is the significance of these values for assessing impacts of the proposed planning action? Several specific examples of this concern/question are discussed in more detail below.

Page 398 – *"Greater sage-grouse populations have declined in portions of the MZ1 through wholesale loss of habitat as well as through impacts to birds on the remaining habitat through disturbance and direct mortality."*

COMMENT: What is the source of this information and to which parts of the HiLine planning area does this statement apply? What are the sources of direct mortality in the HiLine planning area (or outside of the planning area) that have caused declines sage-grouse in populations? At the population level it is very difficult to ascribe population declines to direct mortality. Populations are cyclic and influenced by many factors including weather.

The report by Samson et al (2004) is a general discussion of birds associated with prairie grassland habitats in the Great Plains. Although the past and current effects of management in parts of MZ1 are addressed in this DEIS, the influence of these factors on sage-grouse in the HiLine planning area, specifically, is unclear. What is the status of sage-grouse populations specific to the HiLine planning area? The DEIS seems to equate Sage-Grouse MZ1 with the planning area, but does not present any rationale for how the planning area is similar or dissimilar. Much of the discussion hinges on information gathered on a much broader scale, which may or may not have direct applicability to the HiLine planning area. Please clarify the above, and provide a more robust discussion of the HiLine planning area specifically.

Page 398 – *"The most pervasive and extensive change to sage-brush ecosystems in MZ1 is conversion of nearly 60% of native habitats to agriculture (Samson et al 2004)."*

COMMENT: The publication of Samson et al (2004) does not address sagebrush ecosystems in Sage-Grouse MZ1. This paper addresses prairie grasslands in the Great Plains, which represents a much larger area. Moreover, Samson et al (2004) also does not differentiate between prairie grasslands and sagebrush steppe.

It is necessary for the final RMP/EIS to explicitly quantify the amount of sagebrush habitat that has been converted to agricultural uses within the HiLine planning area specifically. The DEIS seems to equate Sage-Grouse MZ1 with the HiLine planning area, but fails to provide a rationale detailing how MZ1 is similar or dissimilar to the planning area. Please clarify.

Page 399 – *"Individual species have different thresholds of fragmentation tolerance; greater sage-grouse have large spatial requirements and eventually disappear from landscapes that no longer contain enough patches of habitat while smaller birds like the Sprague's pipit can persist in landscapes with smaller patches of habitat because their spatial requirements are smaller."*

COMMENT: What are the thresholds for patch size for persistence of sage-grouse? This information has implications for management. Various studies have shown patch-size requirements for other

grassland birds. Have studies been done on patch-size thresholds for sage-grouse? What is the source of information that indicates that sage-grouse have habitat patch-size thresholds?

Page 400 – *"Perhaps the most pervasive change associated with grazing management in sage-grouse habitats throughout the MZ is the construction of fencing and water developments (Knick, et al. 2011). Barbed wire fences contribute to direct mortality of sage-grouse through fence collisions (Stevens 2011) and water developments may contribute to increased occurrence of West Nile Virus in greater sage-grouse (Walker and Naugle 2011). Water developments are particularly prevalent in the north central portion of the MZ. Additional habitat modifications associated with grazing management include mechanical and chemical treatments to increase grass production, often by removing sagebrush (Knick, et al. 2011)."*

COMMENT: Page 400 addresses grazing in MZ1 but there is no discussion of grazing or the associated range condition within sage-grouse habitats in the HiLine planning area. Water developments and associated West Nile virus are addressed for MZ1 but again, BLM has not provided any information on how or whether West Nile virus has affected sage-grouse in the HiLine planning area, specifically. BLM needs to add this information in the revised DEIS.

Page 400 *"Currently, nearly 16% of the MZ is within 3km of oil and gas wells, a distance where ecological effect is likely to occur (Knick et al 2011)."*

COMMENT: Energy development in MZ1, especially in the southeast part of MZ1, is addressed. However, energy development in the HiLine planning area is not addressed in similar or sufficient detail. What percentage of HiLine planning area is within 3km of oil and gas wells and how would that affect proposed sage-grouse management in this specific planning area?

Page 400 – *"Much of the current oil and gas development is occurring on private lands with little or no mitigation efforts, which elevates ecological and conservation importance of sage-grouse habitat on public lands."*

COMMENT: This is a very broad statement. Upon what data is this assumption made? What is the source of information that there are little or no mitigation efforts on private land? Does this statement apply to MZ1 or the HiLine planning area? How does current oil and gas development in the planning area compare on private versus public land?

This statement fails to recognize the initiatives and advances in technology that have been developed in response to elevated concerns over the conservation status of sage-grouse. Ramey et al (2011) identify the following advances in technology that avoid and reduce potential effects of oil and gas development on sage-grouse:

- Directional drilling to reduce surface disturbance by drilling multiple wells from one drilling pad;
- Steerable downhole motors and horizontal well bores that can drill as many as many as 20 boreholes from one pad and greatly increase the effective radius of production from one well pad;
- More efficient drill bits that reduce drilling times and rates of failure;

- Lightweight modular drilling rigs which deploy more easily and require a smaller foot print; and
- Slim-hole drilling, micro-holes, and coiled tubing which reduce waste volumes, surface disturbance, and noise.

Has BLM taken these measures into account in its analysis? If not, they need to be fully considered in the revised DEIS.

COMMENT: The listing of sage-grouse as a candidate species under the ESA and its "warranted but precluded" status has increased awareness of the conservation status and conservation efforts and has led to Wyoming, Montana, and other states to develop statewide conservation strategies to protect sage-grouse and their habitat. As such, the RMP/EIS should reference and discuss how such efforts would interface with proposed BLM restrictions. The following are some of the initiatives that have been developed in response to sage-grouse conservation concerns:

- The Wyoming Governor issued Executive Order 2011-5 that establishes guidelines for managing Greater Sage-Grouse Core Area Protection.
- The Montana Governor issued Executive Order No. 2-2013 establishing a Greater Sage-grouse Habitat Conservation Advisory Council which is mandated to gather information, furnish advice, and provide recommendations to the Governor on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the ESA.
- The USFWS, in 2013, issued the Conservation Objectives Team Report, which provides state, federal, local, and private entities with permitting or land management authority information to support conservation actions for sage-grouse.
- The Sage-Grouse National Technical Team (2011) produced A Report on National Greater Sage-Grouse Conservation Measures, which addresses the latest science and best biological judgment to assist in making management decisions.
- The Western Association of Fish and Wildlife Agencies completed the Greater Sage-Grouse Comprehensive Conservation Strategy (2006), which identifies the critical need to develop associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of sage-grouse and the landscapes upon which they depend.
- A joint report (The History and Current Conditions of the Greater Sage-Grouse in Regions with Energy Development -2007) by U.S. Department of Energy, Interstate Oil and Gas Compact Commission and ALL Consulting provides a historical overview of the sage-grouse to help clarify its regional significance; identifies current conservation plans of important stakeholders; and discusses current and historical management approaches.
- The Natural Resource Conservation Service (NRCS) with the Western Governors Association published Conserving the Greater Sage-Grouse: Examples of Partnerships and Strategies of Work Across the West, which illustrates the depth of commitment and cooperation that is taking place across the West to conserve the sage-grouse.
- In 2010, the NRCS and numerous conservation partners (local, state and federal agencies, Tribes, non-governmental organizations) in the Western US established the Sage Grouse Initiative to work towards sustaining working ranches and conserve Greater sage-grouse populations in the West using existing voluntary conservation programs.

In addition, the DEIS should acknowledge and directly consider information such as the joint report of the Department of Energy, Interstate Oil and Gas Compact Commission and All Consulting (2007), which states:

"The oil and gas industry is a vital component for the successful conservation of sage-grouse. To date, this particular industry has had active members with sage-grouse workgroups and is involved in surveying and monitoring efforts within sage-grouse habitats, such as the Cedar Creek Anticline or Powder River Basin. In certain areas, the oil and gas industry has been responsible for generating sage-grouse distribution density data, as well as other wildlife species, in localities that previously lacked data. The industry is beginning to take a more active role in the conservation and protection of the bird by funding study-based projects."

Chapter 4 - Environmental Consequences

The sheer length and disjointed organization of Chapter 4 (e.g., weaving between alternatives, impacts common to all alternatives, topic areas, cumulative effects, etc.) makes it incredibly difficult and virtually impossible to discern the crux of the matter related to sage-grouse populations in the HiLine planning area. Frankly, this general comment regarding document organization pertains to all topic areas. Specific to the Environmental Consequences of the listed alternatives (A through E) on sage-grouse populations, BLM fails to describe the potential impacts to sage grouse populations within the HiLine Planning area due to each of the Alternatives examined (as a function of proposing different land classifications and various NSO/CSU restrictions associated with those classifications). We request that a relative comparison of alternatives be included in the revised DEIS. It is essential for the public to understand how these potential impacts compare among alternatives.

What is the current status of sage-grouse populations in the HiLine FO? Are they increasing, decreasing or remaining stable? This must be the crux of the analysis. Without a clear description of the existing sage-grouse resource, it is impossible to assess the predicted effects of various management alternatives on sage-grouse populations. Is the preferred alternative expected to result in populations that are larger, smaller, or remain at current level? How would this differ among alternatives? All these issues must be addressed in a revised DEIS.

Under *Assumptions and Guidelines*, BLM provides no discussion of the assumed relationship of sage-grouse and sage-grouse habitat in MZ1 compared to the HiLine planning area. Most of the cited references that address effects of oil and gas development on sage-grouse have been conducted in the southeast Montana and Wyoming in the area of MZ1 where intensive development has been ongoing for decades, which is not a projected occurrence in the HiLine FO.

Ramey et al (2011) report that:

"Current stipulations and regulations for oil and gas development in sage-grouse habitat are largely based on studies from the Jonah Gas Field and Pinedale Anticline. These and other intensive developments were permitted decades ago, using older, more invasive technologies and methods. The density of wells is high, due to the previous practice of drilling many vertical wells to tap the resource (before the use of directional and horizontal drilling of multiple wells from a single surface

location became widespread), and prior to concerns over sage-grouse conservation. These fields and their effect on sage-grouse are not necessarily representative of sage-grouse responses to less-intensive energy development. Recent environmental regulations and newer technologies have lessened effects to sage-grouse."

In addition, Taylor et al (2007) analyzed six oil and gas development areas in Wyoming with various degrees and ages of activity to determine sage-grouse population trends relative to intensity and timing of oil and gas development. They report that:

- Sage-grouse population trends are consistent among populations regardless of the scope or age of energy development fields, and that population trends in the six development areas mirror trends state-wide;
- Application of the BLM standard sage-grouse stipulations appear to be effective in reducing the impact of oil and gas development on male-lek attendance;
- Male lek attendance in areas that are not impacted by oil and gas development is generally better than areas that are impacted;
- Displacement from impacted leks to non-impacted leks may be occurring; research is needed to assess displacement and its implications for developing sage-grouse conservation strategies;
- Lek abandonment was most often associated with two conditions, including high density well development at forty-acre spacing (sixteen wells per square mile), and regardless of well spacing when development activity occurred within a the quarter-mile lek buffer;
- Extirpation of sage-grouse has not occurred in any of the study areas;
- Long-term fluctuations in sage-grouse population trends in Wyoming reflect processes such as precipitation regimes rather than energy development activity; however, energy development can exacerbate fluctuations in sage-grouse population trends over the short-term.

Impacts under Alternative E (Preferred Alternative)

Page 501 – *"Greater sage-grouse: Lands within one mile of greater sage-grouse leks would be stipulated as NSO. This would affect 107,494 acres, of which 58,085 acres (54%) are already leased. Greater sage-grouse nesting habitat would be stipulated with a CSU stipulation. This would affect 1,212,152 acres, of which 221,385 acres (18%) are already leased. Areas that fall within the boundaries of the Greater Sage-Grouse Protection Priority Area would be subject to that stipulation."*

COMMENT: Please clarify and/or provide the total BLM acres of "Federal Mineral Estate" and "Surface" that would be included within the "General Habitat acres" category for the HiLine planning area in the revised DEIS. It is unclear based on the information presented here as well as on Page 167 of the Draft RMP/EIS what the total number of acres that fall either under this broad category would be and whether the total would be derived from adding in those acres subject to NSO with those subject to CSU stipulations in nesting/brood rearing acres, or whether there is another way to calculate this total.

Page 501 - *"Crucial winter range: Lands that have been identified as crucial winter range for big game and/or greater sage-grouse would be stipulated as CSU. This would affect 44,720 acres, of which 7,154 acres (16%) are already leased."*

COMMENT: It is impossible to discern from the DEIS which lands are involved. Please depict on a map in a revised DEIS where this crucial winter range is located and how/if this area intersects with the main Priority Protection Areas, General Sage Grouse areas, and/or Restoration Areas.

Page 607 – *"The 42,020 acre Frenchman ACEC would be designated. Management actions would be implemented to protect erodible soils and areas (rock outcrop) and important wildlife habitats such as crucial mule deer winter range, greater sage-grouse leks and adjacent nesting habitat, and habitat for designated BLM sensitive species. Establishing the ACEC would restrict surface-disturbing activities such as mineral development and rights-of-way. The ACEC would be an exclusion area for wind energy rights-of-way. An NSO stipulation for oil and gas leasing would avoid direct long-term impacts to scenic values, wildlife, and the unique landscape. The entire area is within a very low development potential for oil and gas exploration and development and is currently unleased."*

COMMENT: Why isn't the Frenchman ACEC reflected in the summary of Alternative E potential impacts relative to sage grouse listed on Page 501, which lists acreages of NSO and CSUs for various categories of sage grouse habitat?

Page 682 – *"Many of the current oil and gas stipulations in place to protect wildlife resources are effective at mitigating effects at local scales, but often do not mitigate impacts at larger scales (Naugle, et al. 2009)."*

COMMENT: What specific oil and gas stipulations are referenced as effective at protecting wildlife resources at local scales but often do not "mitigate impacts" at larger scales"? What does this mean or how does this apply to the specific NSO/CSU restrictions proposed in this DEIS under Alternative E (See page 728)? The effectiveness of mitigation is a topic that has not been addressed in this DEIS. Mitigation of potential impacts from oil and gas development has been ongoing with increased intensity in recent years, especially in Wyoming. It would be prudent for BLM to review types of mitigation that have been effective in avoiding and reducing impacts to sage-grouse and other wildlife species affected by oil and gas development and include them in the revised DEIS.

Page 683 – *"Recent investigations conducted on the effects of oil and gas activities on greater sage-grouse found impacts to breeding populations when well densities exceed one well pad/2.6 km² (one well pad/mi²) within 3 km (1.9 miles) of a lek (Holloran 2005) and impacts at well densities of 8/mi² exceeded the species threshold of tolerance (Holloran 2005, Walker, et al. 2007, Doherty, et al. 2006). Harju, et al. (2009) found that long-term effects varied by development area but generally occurred at densities greater than two well pads/mi² within 5.3 miles of a lek. Some areas had impacts when well densities were less than one well pad/mi2 and common well pad densities of 4 and 8 well pads/mi² were associated with lek declines ranging from 13-74% and 77-79% respectively (Harju, et al. 2009). Holloran (2005) and Walker, et al. (2007) found effects were often not noted until 3-4 years after development and Harju, et al. (2009) found effects in some areas were only apparent 9-10 years after development, suggesting that the full impact of development may not*

have yet occurred from recent oil and gas activities. In addition, Tack (2009) found the probability of large leks (>25 males) decreased with the number of wells within 12.3 km (7.6 miles) of a lek and no large leks were expected when well pads exceeded 2 wells/mi². Yearling females avoided infrastructure when selecting nesting sites (Holloran, et al. 2010) and older females that nested near infrastructure had lower survival (Holloran 2005). This suggests that impacts to greater sage-grouse populations are determined by the level of disturbances in nesting habitat regardless of the distance of disturbances to leks, and impacts can be assessed by well density in sagebrush habitats even though those impacts are measured by the number of males at nearby leks and are often described in relation to distance to leks. The threshold level for disturbances in silver sage habitats may be lower because of the limited habitat available in this system (Tack 2009)."

COMMENT: Numerous articles are referenced in this paragraph with a wide variety of results/findings. How do these myriad of findings relate to the RMP/EIS's singular conclusion that "*This suggests that impacts to greater sage-grouse populations are determined by the level of disturbances in nesting habitat regardless of the distance of disturbances to leks, and impacts can be assessed by well density in sagebrush habitats even though those impacts are measured by the number of males at nearby leks and are often described in relation to distance to leks*"? We ask BLM to specifically clarify how this "suggestion" could be made from the variety of citations discussed above and how the conclusion reached in the DEIS relates to the proposed NSO/CSU stipulations in the document.

Page 689 – "*Greater Sage-Grouse: Impacts from surface-disturbing activities, disruptive activities, and management actions are anticipated for greater sage-grouse across all alternatives. Estimated short-term and long-term surface disturbance from BLM actions in the planning area are anticipated to result in loss, degradation, and fragmentation of sagebrush habitat. Oil and gas development is the major source of surface disturbance identified in the planning area under all alternatives, and oil and gas development has been identified as a cause of declining greater sage-grouse populations (Doherty, et al. 2006, Walker, et al. 2007, Naugle, et al. 2009, Harju, et al. 2009). Surface disturbance is anticipated to have adverse impacts to sagebrush habitats including temporary and permanent loss of habitats across all alternatives. Fragmentation and degradation of habitat for greater sage-grouse also is anticipated from surface-disturbing activities and associated development.*"

COMMENT: While the document discusses that potential impacts from various alternatives would impact the greater sage-grouse across all alternatives, there is no clearly articulated discussion of how existing population levels of sage-grouse would be affected by each alternative. The above statement seems to indicate, that even with the preferred alternative, there would be a decline in sage-grouse populations. If this were the case, the preferred alternative (and others) would increase the potential for listing of sage-grouse under the ESA, which the revised DEIS should clearly state.

Page 726 – "*Fluid Minerals: The number of new wells on BLM minerals anticipated under Alternative E is 1,756 wells. Most of these wells (931) would be located in the moderate development potential area. This would result in 9,068 acres of short-term habitat disturbance and 2,337 acres of long-term*

disturbance. Most of this disturbance would occur in grassland/sagebrush/shrubland habitats (approximately 92%, based on percentage of habitat types in the planning area)."

COMMENT: How much of sage-grouse habitat would be affected? The 92% is comprised of "grassland/sagebrush/shrubland habitats." A substantial part of this DEIS addresses oil and gas development and sage-grouse; therefore, it would be appropriate to identify how much sage-grouse habitat would be affected by anticipated oil and gas wells.

Impacts under Alternative E (Preferred Alternative) - Cumulative Impacts

Page 733 – The impact discussions contained in both Chapter 3 and the Chapter 4, particularly when addressing predicted impacts to sage-grouse, rely heavily upon research conducted in MZ1, which we have already pointed out is an area that encompasses sage-grouse habitats in large areas of Montana, Wyoming, and the Dakotas; however, the cumulative effects of land management in the HiLine planning area on sage-grouse, over this broad area, are not addressed under Cumulative Impacts.

MZ1 is extensively referred to in Chapter 3; however, the relationship of sage-grouse and their habitat in MZ1 to the planning area is not addressed. From the text in this DEIS, it appears that MZ1 is thought to be important for sage-grouse management; however, there is no reference to MZ1 in the cumulative effects section on Page 733. Why does Chapter 3 have a section dedicated to MZ1 but impacts of the proposed HiLine management actions are not addressed relative to MZ1?

The section on cumulative impacts would be an ideal place to address the relationship among planning and management activities in MZ1 and the HiLine planning area. At a minimum, the HiLine EIS must address the cumulative effects of the proposed planning activities in the nearby MCFO planning area as they relate to the HiLine planning area.

The cumulative effects discussion does not specifically address the effects of livestock grazing on private and public land on sage-grouse and other wildlife. Comparatively, the draft MCFO RMP/EIS (page 4-60) states:

"Determining season-of-use and livestock numbers for grazing permits on a case-by-case basis would not necessarily result in high quality sage-grouse habitat. The reduction in grass height caused by livestock grazing in sage-grouse nesting and brood-rearing areas has been shown to negatively impact nesting success when residual herbaceous cover was reduced below approximately 7 inches needed for predator avoidance (Gregg et al 1994). Livestock grazing would potentially reduce suitability of breeding and brood-rearing habitat, which would impact sage-grouse populations (USFWS 2010a)."

Grazing undoubtedly has the potential to effect on sage-grouse habitat; however, it is unclear how sage-grouse habitat and displacement of sage-grouse have been affected by grazing practices in the HiLine planning area as well as the broader region (e.g., MZ1 or adjoining MCFO planning area). Potential cumulative impacts should evaluate the effects of livestock grazing on public and private land on sage-grouse.

Appendix E.5 – Requirements and/or Guidelines for Wildlife Controlled Use Stipulations

Page 903 – *"Prior to surface-disturbing or disruptive activities a plan to maintain bighorn sheep habitat will be prepared by the proponent and implemented upon approval by the authorized officer. This plan shall address how short-term and long- term direct and indirect effects to bighorn sheep range will be mitigated based on current science and research."*

COMMENT: This appendix indicates that plans will be required to develop CSU stipulations for bighorn sheep range, crucial winter range, greater sage-grouse habitat and protection priority areas, and grassland bird priority areas. The plans will address a range of mitigation and monitoring requirements; however, there is no discussion of how appropriate levels of mitigation and monitoring will be determined. For example, the plan shall consider the use of off-site mitigation (e.g., creation of sagebrush habitat or conservation easements) with proponent dollars to offset habitat losses. No discussion of how appropriate levels of off-site mitigation will be determined is provided. Creation of sagebrush habitat may not be practicable. Similarly, how will the adequacy of a monitoring plan be determined? Have previous successful mitigation and monitoring been conducted relative to sage-grouse and their habitat? From the discussion in the DEIS, it appears that identifying effective mitigations is a new endeavor, with few or no precedents. Implementing what has been successful in Wyoming and other parts of MZ1 would be appropriate.

Page 936 - The appendix also states that: *"If approved by BLM, the proponent may contribute funding to maintain habitat function based on estimated cost of habitat treatments or other mitigation needed to maintain the functions of impacted habitat."* How will pre-project habitat (i.e., baseline) functions be assessed and how will residual impacts to habitat function, following implementation of a project, be assessed and how does that translate into adequate mitigation? It appears that many of the stipulations for CSU will be assessed using subjective criteria that BLM has failed to identify in the DEIS.

Appendix E.5 Requirements and/or Guidelines for Wildlife Controlled Use Stipulations

Page 973 – *"Plans that are required by controlled surface (CSU) stipulations for bighorn sheep range, crucial winter range, greater sage-grouse habitat and protection priority areas, and grassland bird priority areas will be subject to the following requirements and/or guidelines. These requirements and/or guidelines may be modified based on the best available science and research, and best management practices."*

COMMENT: While the appendix lists what a plan to maintain functionality of sage-grouse habitat must address, it does not distinguish which of the elements are "requirements" and which are "guidelines".

Page 905 (Greater Sage-Grouse Priority Areas) – *"Within the protection priority area surface-disturbing and disrupting activities will be avoided if possible within 6/10 mile from any existing surface-disturbing or disruptive activity."*

COMMENT: In other parts of the DEIS, NSO is stipulated for sage-grouse protection priority areas. How does the 6/10 mile "avoidance if possible" relate to NSO?

Appendix M - Mitigation Measures and Conservation Actions for Greater Sage-Grouse Habitat

Page 1126 (Fluid Minerals) – "*To limit impacts to breeding and nesting habitat, surface-disturbing activities shall be prohibited or restricted within 4 miles of a lek to the extent possible and consistent with valid existing rights.*"

COMMENT: The guidelines in Appendix M restrict or avoid disturbance at varying distances from sage-grouse leks. For example, page 1135 under the heading Greater Sage-Grouse Leks, states the following: "*Surface-disturbing activities would be avoided if possible within 1 mile of greater sage-grouse leks.*" These guidelines present a conflict on avoidance of disturbance in relation to leks, which must be clarified.

Draft Montana DEIS Comparisons - Proposed Sage Grouse Habitat Management

This section includes questions generated from a comparative review of the HiLine, MCFO, and Billings/Pompey's Pillar DEISs, with a particular focus on the various management restrictions within sage-grouse habitat. Tables 1 and 2 serve as summaries of main sage-grouse management parameters and management prescriptions included in each of the three referenced RMP/EIS documents and serve as reference points for several specific comments presented below:

Table 1
Sage-Grouse Management Parameters on BLM-Administered Land

Planning Area	BLM Sage Grouse Habitat	Estimated # of Leks	BLM Sage-Grouse Habitat Acreages		
			General Habitat Acres	Protection-Priority Areas	Restoration Areas / Source Population Area
Miles City Field Office	2.5 Million acres	• 386 leks of unconfirmed status, • 455 confirmed active leks, • 33 extirpated leks, and • 19 confirmed inactive leks.	BLM Oil/Gas Lease[(1)]: • 800,000 acres BLM Surface: • 400,000 acres	BLM Oil/Gas Lease: • 1,403,000 acres BLM Surface: • 792,000 acres	BLM Oil/Gas Lease: • 289,000 acres* BLM Surface: • 109,300 acres* * Of these totals, 8,000 acres of Oil/Gas Lease and Surface are part of the Source Population Area.
HiLine	Unknown [(2)]	• 154 leks	BLM Administered Federal Mineral Estate (BLM-FME) [(1)]: • unknown acres [(2)] BLM Surface: • unknown acres[(2)]	*Grassland Bird/Greater Sage Grouse Priority Area:* BLM-FME: • 1,028,661 BLM Surface: • 930,265 acres *Sage Grouse Priority Protection Area:* BLM-FME: • 318,143 acres BLM Surface:	BLM-FME: • Unknown acres (3) BLM Surface: • 46,786 acres

Planning Area	BLM Sage Grouse Habitat	Estimated # of Leks	BLM Sage-Grouse Habitat Acreages		
			General Habitat Acres	Protection-Priority Areas	Restoration Areas / Source Population Area
				• 298,772 acres	
Billings/ Pompey's Pillar	336,479 Acres[4]	• 19 active leks on BLM Surface (8 inactive) • 30 lek sites are on FME.	BLM-FME: • 116,452 acres BLM Surface: • 78,575 acres	BLM-FME: • 191,543 acres BLM Surface: • 154,140 acres	BLM-FME: • 63,437 acres BLM Surface: • 45,555 acres

[1] See comment below for questions concerning "Oil and Gas Lease" and Federal Mineral Estate" terminologies.

[2] See comment below for a question concerning total BLM acres of sage-grouse habitat within the HiLine Planning Area

[3] See comment below for a question concerning total BLM acres of "Federal Mineral Estate" within Restoration Areas (HiLine RMP/EIS)

[4] See comment below regarding the total acreage reported in Chapter 3, Page 3-85 (Table 3-29) of the Billings/Pompey's Pillar RMP/EIS.

Table 2
Management Prescriptions for Three BLM Planning Areas in Montana

Planning Area	BLM Sage-Grouse Habitat Categories			
	General Habitat Acres	Nesting/Brood Rearing	Protection-Priority and Source Population	Restoration Areas
Miles City [1]	Surface-disturbing activities would be avoided within 2 miles of leks CSU stipulations within 2 miles of leks Low-voltage power lines buried within 2 miles of leks	Surface-disturbing activities would be avoided within 4 miles of leks. Timing restrictions (BMP Appendix)	NSO	CSU stipulations
HiLine [2]	NSO within 1 mile of leks	CSU stipulations	NSO	---

Planning Area	BLM Sage-Grouse Habitat Categories			
	General Habitat Acres	Nesting/Brood Rearing	Protection-Priority and Source Population	Restoration Areas
Billings/ Pompey's Pillar	CSU stipulations NSO on "new oil and gas leases" within 0.6 miles of a lek. Timing restrictions within 3 miles of leks (March 1 – June 15)	Timing restrictions within 3 miles of leks (Mar.1 – June 15) CSU stipulations Geophysical exploration allowed on existing roads Timing-restrictions (Mar1. –June 15) within 4 miles of leks	NSO	NSO on "new oil and gas leases" within 0.6 miles of a lek. Timing restrictions within 3 miles of leks (Mar.1 – June 15) CSU stipulations Geophysical exploration allowed on existing roads Timing-restrictions (Mar1. –June 15) within 4 miles of leks

(1) Miles City indicates that sage-grouse protection areas will not be designated as ACECs and no compensation for impacts would be required in sage-grouse impacts (which may conflict with CSU stipulations)

(2) Hi Line also has NSO restrictions in sage-grouse wintering areas from Dec. 1 – March 31.

Comment: As summarized in **Table 1** above, when discussing specific acreages of sage-grouse habitat that would fall under various management restrictions (based on the respective Preferred Alternatives), the Billings/Pompey's Pillar DEIS and the HiLine DEIS reference BLM Administered "Federal Mineral Estate" and "Surface" under each main sage-grouse management classifications (e.g., General Habitat, Priority Protection Area, Restoration Area). However, the MCFO DEIS references "Oil and Gas Lease" and "Surface" as the two main categories of BLM administration. Please clarify the questions below:

- Are the categories of "Federal Mineral Estate" and "Oil and Gas Lease" intended to represent the same classification? If not, please explain any difference. If yes, please clarify terminologies among all Montana BLM RMP/EISs to aid the public (and potential operators) in consistently interpreting the proposed sage-grouse habitat restrictions.
- Are all proposed surface management restrictions applied equally regardless of whether the BLM Administered Lands in question are "Surface or "Federal Mineral Estate" and/or "Oil and Gas Lease"?

- Is it assumed that if a particular "Surface" acreage is under BLM Management then the mineral estate within that same acreage is also under BLM Administered "Federal Mineral Estate" and/or "Oil and Gas Lease" as well?

Comment: Are the 2.5 million acres reported as sage-grouse habitat under BLM Administration (within the MCFO planning area) a summation of the "Oil and Gas Lease" acreages reported for the three main management categories reported in MCFO DEIS Table 2.22? See summary in **Table 1** above (General Habitat Acres [800,000 acres], Protection-Priority Areas [1,403,000 acres] and Restoration Areas and Source Population Area [289,000 acres]).

Comment: Three appendices within the MCFO DEIS address management practices to avoid, minimize, and compensate for losses to sage-grouse habitat (i.e., BMPs Appendix, Minerals Appendix, and Fish and Wildlife Appendix). These appendices list specific practices and restrictions that apply to oil and gas development in sage-grouse habitat but do not specify which practices are stipulations that must be met for leasing and development. It is difficult to determine what an oil and gas operator will have to comply with relative to actions in sage-grouse habitat. **Table 2** (below) summarizes what appear to be the primary management restrictions, but they have been summarized from various sections of the DEIS and may not be comprehensive. The MCFO DEIS (and the HiLine and Billings/Pompey's Pillar DEISs accordingly) must identify required stipulations and guidelines (are these the same as BMPs?) in a comprehensive table within either DEIS Chapter 2 or 3.

Comment: Two of the three DEISs indicate that CSU stipulations will be developed for activities in various sage-grouse habitats; however, it is unclear in the MCFO DEIS how CSU stipulations will be developed. By comparison, the HiLine DEIS identifies how CSU stipulations will be developed in Appendix E.5 and the Billings Pompey's Pillar DEIS describes the development of CSU stipulations in Appendix C. Both the HiLine and Billings / Pompey's Pillar DEISs indicate that the proponent must prepare a plan to maintain the functionality of sage-grouse habitat to assist in identifying CSU stipulations. How will CSU stipulations be identified in the MCFO planning area?

Comment: Please clarify the total acreage of BLM-Administered acreage of sage-grouse habitat within the Billings/Pompey's Pillar planning area. Chapter 3, Page 3-85 (Table 3-29), reports a total of 336,479 acres. However the total appears to be 371,432 acres when summing the acreages presented in Chapter 2, Page 2-19 (Table 2-1). Please clarify.

Comment: Please clarify and/or provide the total BLM acres of "Federal Mineral Estate" that would be included within the "Restoration Areas" category for the HiLine planning area. This information appears to be missing in the HiLine DEIS.

Comment: Please clearly depict what management restrictions/prescriptions would be required for the two proposed ACECs within the HiLine planning area; specifically the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC (461,220 acres) and Greater Sage-Grouse Protection Priority Area ACEC (930,265 acres). Jointly the two ACECs comprise over 1.39 million acres and represent a extensive land area.

Comment: To understand the effects of proposed sage-grouse management in the planning areas for the three BLM field offices, the sage-grouse resource (i.e., populations and habitat) that would be affected by various management directives need to be identified. The DEISs for the three planning areas do not present sage-grouse estimates for population sizes (see **Table** 1) so other metrics that represent the sage-grouse resource which will be subject to the proposed management directives need to be presented. To better understand the sage-grouse resource that would be subject to the management prescriptions identified in the three DEISs, we request the that following information be clearly stated in each DEIS's *Chapter 3 – Existing Environment*:

- Acres of various classes of sage-grouse habitat within each planning area on BLM-administered lands; and
- Number of leks on BLM-administered lands in the planning area.

Comment: As shown in **Table 2** above, the planning prescriptions for surface occupancy and controlled surface use for the three planning areas (MCFO, HiLine, and Billings/Pompey's Pillar) are variable which raises questions of how NSO restrictions were determined. Based on review of the three draft planning documents, it appears that all three relied on same data sources to address impacts of oil and gas development on sage-grouse. All planning areas have similar sage-grouse habitat conditions (i.e., all are in Sage-Grouse Management Zone 1), and all are anticipating some level of oil and gas development. It is unclear how different NSO restrictions around leks were developed. NSO restrictions around leks vary among the planning areas, with buffers around leks being 0.6, 1, 2, and 3 miles. Why are these NSO restrictions different for the three planning areas when they all relied on similar sources to define potential impacts associated with oil and gas development? Does sage-grouse vulnerability to impact or population viability differ among BLM planning areas?

Additional Literature Cited

Ramey, R., L. Brown, and F. Blackgoat. 2011. Oil and gas development and greater sage-grouse (*Centrocercus urophasianus*); A review of threats and mitigation measures. The Journal of Energy Development: 35(1); 49-77.

Taylor, R., M. Dzialak, L. Hayden-Wing. 2007. Greater sage-grouse populations and energy development in Wyoming. Accessed March 2013 at http://bogc.dnrc.mt.gov/reports.asp

CONCLUSION

We recognize that BLM endeavored to add to the project of revising several resource management plans proposed management decisions related to the Greater Sage-grouse in a very short time frame. As a result of the monumental task, BLM has failed to adequately to properly prepare the DEIS as described above in our comments. In addition to failing to meet the requirements of NEPA, BLM has used Greater Sage-grouse data to develop its plan alternatives that is both not applicable to the HiLine FO and/or at such a scale that makes it impossible to make accurate and reasonable land use decisions. Moreover, BLM has failed to provide adequate, if any, maps of sage-grouse or other wildlife habitat areas in the DEIS. Additionally, the absence of clear descriptions of how BLM intends to proceed with implementing a host of measures associated with its proposed

management is another significant and fatal flaw in the analysis. Therefore, as stated at the beginning of this comment letter, we formally ask for a redraft of the DEIS to be published for comment and review before BLM finalizes the DEIS and issues a ROD.

Please do not hesitate to contact us if you have any questions regarding our comments. We appreciate the opportunity to provide them to BLM, despite the fact that an inadequate period for review was provided.

Sincerely,

David A. Galt	Claire M. Moseley	J. Spencer Kimball	Richard Dunbar
Montana Petroleum Association	Public Lands Advocacy	Western Energy Alliance	MT Association of Oil, Gas & Coal Counties

Cc: The Honorable Max Baucus
The Honorable John Tester
The Honorable Steve Daines
The Honorable Sally Jewel, Secretary of Interior
Neil Kornze – Acting BLM Director
Jamie Connell – Acting BLM Deputy Director
Kate Kitchell – Acting Montana BLM State Director

Montana Department of
ENVIRONMENTAL QUALITY

Steve Bullock, Governor
Tracy Stone-Manning, Director

P. O. Box 200901 Helena, MT 59620-0901 (406) 444-2544 Website: www.deq.mt.gov

June 4, 2013

Mary Bloom
Project Leader
BLM Miles City Field Office
111 Garryowen Road
Miles City, MT 59301

Submitted Via Email: BLM_MT_MCFO_RMP@blm.gov

RE: Montana Department of Environmental Quality Comments on Bureau of Land Management Miles City Draft Resource Management Plan

Dear Ms. Bloom:

The Montana Department of Environmental Quality-Air Resources Management Bureau (DEQ) has reviewed the Montana Bureau of Land Management (BLM) Miles City Draft Resource Management Plan (RMP) released for public review on March 7, 2013, and is submitting the attached comments.

DEQ is concerned that our federally-approved authority to manage air quality resources within the State of Montana has not been properly considered or embraced within the resource management partnership reflected in the draft RMP. BLM has mischaracterized Montana's air quality program by only referencing the regulation of large stationary sources and not recognizing the full extent of Montana's Air Monitoring, Analysis, and Planning Program or Air Quality Permitting, Compliance and Registration Program.

While DEQ appreciates the opportunity to review and comment on the Miles City draft RMP, the resource management partnership would be much better served if DEQ had the opportunity to be an active participant much earlier in the scoping, development, and planning process. In addition, DEQ requests that all official Montana-related BLM requests and/or notifications for public comment be submitted to:

Bonnie Lovelace, Regulatory Affairs Manager
Director's Office
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

If you have any questions regarding this letter, please contact Eileen Steilman at (406) 782-2689, ext. 203 or by e-mail at ESteilman@mt.gov.

Sincerely,

David L. Klemp
Chief, Air Resources Management Bureau
(406) 444-0286
(406) 444-1499 –fax
dklemp@mt.gov

Attachment
cc: Susan Basset, BLM - SBassett@blm.gov
Bonnie Lovelace, DEQ - BLovelace2@mt.gov

Comments Regarding
BLM Miles City Field Office
Draft Resource Management Plan
Release Date: March 7, 2013

Submitted by the Montana Department of Environmental Quality
Air Resources Management Bureau

Montana's Air Quality Program

The Montana Department of Environmental Quality-Air Resources Management Bureau (DEQ) has been delegated Federal Clean Air Act (CAA) authority from the United States Environmental Protection Agency (EPA) to regulate air quality and air emissions in the state of Montana. DEQ operates an air quality monitoring network for the purpose of measuring ambient concentrations of criteria air pollutants and monitoring compliance with National and Montana Ambient Air Quality Standards (NAAQS/MAAQS).

DEQ is concerned about the mischaracterization of Montana's air quality programs in the Miles City Draft Resource Management Plan (RMP). The Bureau of Land Management (BLM) seems to disregard most of Montana's air quality program with reference only to DEQ regulating large stationary sources, which is not an accurate representation of our air quality programs.

DEQ has State Implementation Plan approved New Source Review (NSR) permitting programs, which include Prevention of Significant Deterioration (PSD), Non-Attainment Area (NAA), and minor source programs. DEQ's PSD and NAA permitting programs impose controls on major stationary sources in order to control emissions of regulated pollutants. Emission controls are typically required through the application of Best Available Control Technology (BACT) or Lowest Achievable Emission Rate, depending on the applicable NSR permitting program. In addition, DEQ implements a minor source NSR permitting program (e.g. minor source Montana Air Quality Permits (MAQP) and registrations). DEQ's minor source NSR program requires sources with a potential to emit greater than 25 tons per year of any regulated air pollutant to apply for a permit to construct pursuant to the MAQP requirements or register with the DEQ pursuant to the registration requirements under the Administrative Rules of Montana (ARM). To ensure compliance with the NAAQS, DEQ's minor NSR program contains regulatory requirements that track activity and require the application of BACT. Additionally, the ARM require reasonable precautions to limit fugitive particulate emissions from all activities in Montana (i.e., permitted, registered, and those facilities that do not require a permit/registration). DEQ's NSR program not only provides the emission benefits necessary to attain Montana's air quality goals, but also includes many features that provide regulatory certainty while still allowing flexibility in the implementation of our air quality programs.

DEQ issues open burn permits and, along with several counties, operates a Major and Minor Open Burning Smoke Management Program under the authority of DEQ's Open Burning Regulations. In cooperation with the DEQ, smoke management for prescribed fire activity is managed by the Montana/Idaho Airshed Group. The Montana/Idaho Airshed Group has established smoke management procedures for prescribed fire which are consistent with DEQ Open Burning Regulations. Prescribed burns would be completed in a manner that is consistent with procedures established by the Montana/Idaho Airshed Group and the associated permit conditions of the Major Open Burning Permit and the rules addressing Minor Open Burning pursuant to the DEQ Open Burning Regulations.

The following comments identify DEQ's concerns regarding inconsistencies with Montana's air quality program, policy, plans, and authority.

- The draft RMP does not address smoke management for wildfires. BLM participates in the Montana-Idaho Interagency Smoke Management Coordination Strategy, along with other Federal Land Managers and DEQ. DEQ recommends incorporating information regarding the Montana-Idaho Interagency Smoke Management Coordination Strategy into the RMP.

- DEQ is concerned with the terminology used in the draft RMP. The draft RMP contains numerous terms with unique legal and technical meaning and implications under the CAA. In many cases, the draft RMP terminology is not clearly defined and may have different meanings than established by the CAA (i.e. – adverse impacts, increment analysis, air quality related values, design value, etc.).

- The National Park Service and the United States Fish and Wildlife Service have asserted that all non-Class I areas under their jurisdiction should be considered to be sensitive Class II areas. The justification used to determine which areas should be considered sensitive Class II areas is unclear. Impacts to sensitive Class II areas would be modeled in the same manner as Class I areas; this is inconsistent with CAA requirements.

- DEQ is concerned about the use of air quality modeling at the planning stage. Without project specific information several assumptions must be made to complete the modeling which results in a quantitative analysis based on assumptions rather than an informed scientific evaluation.

- The draft RMP states that the oil and gas emission inventories were generally based on emission standards required by DEQ and EPA. The draft RMP identifies new Federal regulations and states that the oil and gas emission inventories will be updated in the final RMP to address these regulatory changes. However it is not clear if BLM considered DEQ's reasonable precautions or emission control requirements (as described above) in the inventory development. DEQ requests that BLM review their emission inventory assumptions and calculation for inconsistencies and ensure all applicable emission reduction requirements are considered and incorporated into the final RMP emission inventory as appropriate.

- Monitoring information provided in the draft RMP should be updated to reflect the current monitoring program. With the exception of the NCORE monitoring station, carbon monoxide monitoring was suspended throughout the state at the end of March 2011. All of the monitors at the Sidney, Birney, and Broadus monitoring stations are designated as State or Local Air Monitoring Station except for PM_{10} which is designated as a Special Purpose Monitor. The $PM_{2.5}$ monitoring data for the Sidney, Birney, and Broadus monitoring stations appear to be mixed-up and referencing the wrong station. DEQ requests that BLM review the monitoring station information and data provided within the draft RMP and supporting documents for accuracy.

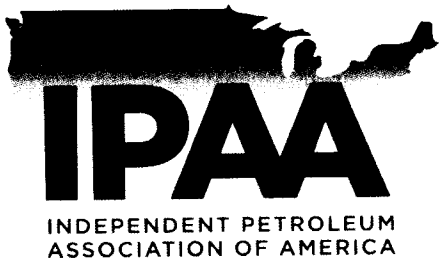
- BLM has proposed monitoring based-mitigation measures in which monitoring data may trigger enhanced mitigation measures that are beyond BACT and New Source Performance Standards. Under CAA authority, DEQ is required to take into account environmental benefit and economic and technical feasibility prior to requiring similar measures.

- In addition, DEQ is concerned that BLM may implement management strategies for the entire planning area based on a single monitored exceedance. DEQ recommends that BLM consider establishing spatial limitations when requiring enhanced mitigation measures. It would be inappropriate to mandate mitigation measures for an entire planning area that are not consistent with the CAA.

- Prior to completion of the photochemical grid modeling (PGM), BLM would review NAAQS exceedances and determine if enhanced mitigation is warranted. BLM has proposed to monitor EPA's Air Quality System (AQS) database to determine if monitoring data is showing an exceedance. It is not clear what criteria BLM will use to determine if an exceedance has occurred. DEQ requests that BLM include an explanation of how an exceedance will be determined in the RMP. Additionally, once data is posted to the AQS, even though available for review, the data may not be certified for several months. It would be inappropriate to compare uncertified data to the NAAQS. Additionally, DEQ cautions BLM against imposing enhanced mitigation measures based on uncertified data.

- Following completion of the PGM, BLM has proposed to calculate site specific design values for each pollutant monitored at a federal reference monitor within the planning area. If a BLM calculated design value is greater than 85% of the NAAQS, enhanced mitigation measures would be evaluated and selected by the BLM, in cooperation with DEQ, etc., when appropriate. It is unclear to DEQ what criteria BLM will use to determine when it is appropriate or not appropriate to consult with DEQ. Additionally, establishing a threshold of 85% of the NAAQS does not appear to have any legal basis within the CAA. It is unclear under what authority BLM plans to implement mitigation measures based on this proposed threshold.

- It is unclear within the draft RMP who and how the proposed mitigation measures will be implemented and how DEQ would be involved in these efforts. DEQ must consider the implementation of any new requirements and ensure that these requirements are incorporated in a way that is consistent with DEQ's implementation authority. Furthermore, DEQ is concerned that BLM does not sufficiently recognize the potential conflicts and confusion certain proposed mitigation measures may cause with implementation of DEQ's air quality program.



COMMENTS ON BLM'S HYDRAULIC FRACTURING RULEMAKING PROPOSAL

August 22, 2013

Via e-filing on www.regulations.gov

Mr. Neil Kornze
Principal Deputy Director
Attn: Regulatory Affairs
Bureau of Land Management
United States Department of the Interior
20 M Street SE
Room 2134LM
Washington, DC 20003

Re: RIN 1004-AE26. *Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands*, proposed rule published in the Federal Register on May 24, 2013 (78 Fed. Reg. 31,636).

Dear Mr. Kornze,

On September 10, 2012, the Independent Petroleum Association of America ("IPAA") and the Western Energy Alliance (the "Alliance") submitted comments on an initial version of regulations that the Bureau of Land Management ("BLM") proposed relating to oil and gas well stimulations. IPAA is the leading, national upstream trade association representing thousands of oil and natural gas producers and service companies. The Alliance represents over 400 members in all aspects of environmentally responsible exploration and production of oil and natural gas on federal and Indian lands across the western states.

This submission supplements our previous comments and addresses the revised version of the proposed rule. These comments are filed on behalf of IPAA, the Alliance, the Association of Energy Service Companies, the International Association of Drilling Contractors, the International Association of Geophysical Contractors, the National Stripper Well Association, the Petroleum Equipment Suppliers Association, the US Oil & Gas Association, and the following organizations (collectively, the "Associations"):

Arkansas Independent Producers and Royalty Owners Association
California Independent Petroleum Association

Coalbed Methane Association of Alabama
Colorado Oil & Gas Association
East Texas Producers & Royalty Owners Association
Eastern Kansas Oil & Gas Association
Florida Independent Petroleum Association
Illinois Oil & Gas Association
Independent Oil & Gas Association of New York
Independent Oil & Gas Association of West Virginia
Independent Oil Producers Agency
Independent Oil Producers Association Tri-State
Independent Petroleum Association of New Mexico
Indiana Oil & Gas Association
Kansas Independent Oil & Gas Association
Kentucky Oil & Gas Association
Louisiana Oil & Gas Association
Michigan Oil & Gas Association
Mississippi Independent Producers & Royalty Association
Montana Petroleum Association
National Association of Royalty Owners
Nebraska Independent Oil & Gas Association
New Mexico Oil & Gas Association
New York State Oil Producers Association
North Dakota Petroleum Council
Northern Alliance of Independent Producers
Northern Montana Oil and Gas Association
Ohio Oil & Gas Association
Oklahoma Independent Petroleum Association
Panhandle Producers & Royalty Owners Association
Pennsylvania Independent Oil & Gas Association
Permian Basin Petroleum Association
Petroleum Association of Wyoming
Southeastern Ohio Oil & Gas Association
Tennessee Oil & Gas Association
Texas Alliance of Energy Producers
Texas Independent Producers and Royalty Owners Association
Utah Petroleum Association
Virginia Oil and Gas Association
West Virginia Oil and Natural Gas Association

Collectively, these groups represent the thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts. It is the members of these groups that the proposed regulations will most significantly affect. Independent producers drill about ninety-five percent of American oil and natural gas wells, produce about fifty-four percent of American oil, and more than eighty-five percent of American natural gas.

In addition to the specific comments made herein, we support those comments that the participants identified above may submit separately.

We ask that BLM carefully consider the concerns discussed in these comments. We request that BLM rescind or significantly amend the proposed rule to eliminate requirements without a sound technical foundation, reduce overlap with state and tribal requirements, and better balance costs and benefits.

POLICY CONCERNS

Sixteen months into the rulemaking process, BLM remains unable to provide a supportable reason to impose its additional layer of regulations on top of those laws States already enforce. For the high cost this rule will impose on the industry – $345 million per year – what benefit will the public receive? For the disincentive this rule will create to invest in federal and tribal oil and gas leases, to whom will the tribes and the taxpayers turn for the lost leasing and royalty revenue? BLM has been unable to answer these questions. BLM should recognize that states are already regulating hydraulic fracturing admirably. The only imperative to adopt this rule is an arbitrary desire "to do something." The Associations oppose the rule because each of the reasons BLM suggests for adopting the rule is without basis in fact.

States Are Regulating Hydraulic Fracturing Effectively

BLM has assured the public that it is mindful of the capabilities of state regulators. "The BLM acknowledges that many States do have regulations in place; however, not all of the States that contain Federal lands under the BLM's jurisdiction have hydraulic fracturing regulations."[1] This statement provides no basis for the rule.

According to the *Public Lands Statistics* for Fiscal Year 2012, BLM approved 4,256 applications for permit to drill ("APDs") on public lands in 17 states.[2] Of that number, over ninety-eight percent of the wells approved were in just seven states: California, Colorado, Montana, North Dakota, New Mexico, Utah, and Wyoming. Since the beginning of 2010, six of these states have revised their regulations specifically to address public concerns over hydraulic fracturing. The seventh, California, is in the process of amendment.

State	Citation	Eff. Date
Montana	Mont. Admin. R. 36.22.608, 36.22.1015, 36.22.1016, 36.22.1106, 36.22,1010 (2013).	8/26/11
North Dakota	N.D. Admin. Code 43-02-03-27.1 (2012).	4/1/12
Colorado	Colo. Code Regs. §§ 404-205, 404-205A, 404-305.e(1)(A),	7/1/09

[1] 78 Fed. Reg. 31,636, 31,644 (May 24, 2013).

[2] *See* Bureau of Land Mgmt., *Pub. Land Statistics* (2012) at 118, Table 3-16, available at: http://www.blm.gov/public_land_statistics/.

State	Citation	Eff. Date
	404-316C, 404-317, 404-341, 404-903, 404-904 (2013).	
New Mexico	N.M. Code R. 19.15.16.19 (2013).	2/15/12
Utah	Utah Admin. Code r.649-3-39 (2013).	11/1/12
Wyoming	55-3 Wyo. Code R. §§ 45(d)(iv), 45(d)(vi), 45(f), 45(g) (LexisNexis 2012).	Adopted 6/8/10
California	Cal. Dep't of Conservation, Div. of Oil, Gas, and Geothermal Res., Pre-Rulemaking Discussion Draft (2012), *available at* http://www.conservation.ca.gov/dog/general_information/Documents/121712DiscussionDraftofHFRegs.pdf.	Issued 12/18/12

Of the ten states that accounted for less than two percent of the APDs approved, nearly all have amended their regulations to address public concerns regarding hydraulic fracturing.

State	Citation	Eff. Date
Alabama	Ala. Admin. Code r. 400-3-8-.03; Ala. Admin. Code r. 400-1-9-.04.[3]	10/16/07
Alaska	Alaska Admin. Code tit. 20, §§ 25.005, 25.280, 25.283, 25.990 (2013).	Changes Proposed 1/17/2013
Arizona	Ariz. Admin. Code §§ 12-7-108, 12-7-122,12-7-140 (2013).	1/19/94, 1/2/96, 7/15/02
Louisiana	La. Admin. Code tit. 43:XIX § 118 (2013).	10/20/11
Mississippi	26-2 Miss. Code R. § 1.26 (2013).	3/4/13
Nevada	S.B. 390, 77th Sess. (Nev. 2013).	10/1/13
Ohio	Ohio Admin. Code 1509.01–1509.99 (2013). S.B. 315, 129th Gen. Assemb. (Ohio 2012).	8/1/12 9/12/12

[3] On August 1, 2013, the State Oil and Gas Board of Alabama granted a motion to adopt Rule 400-1-9-.04 (regulating hydraulic fracturing) and to amend Rule 400-3-8-.03 (regulating hydraulic fracturing of coal beds). *See* State Oil & Gas Bd. of Ala., Results of Meeting (July 30 - Aug. 1, 2013), available at: http://www.gsa.state.al.us/documents/hearings_results/2013-8-1.pdf.

Oklahoma	Okla. Admin. Code §§ 165:10-3-4, 165:10-3-10, 165:10-7-16, 165:10-21-22 (2013).	7/1/13
South Dakota	S.D. Admin. R. 74:12:02:19 (2013).	4/22/13
Texas	16 Tex. Admin. Code §§ 3.13, 3.29, 3.99, 3.100 (2013); .	1/2/12 1/1/2014

Other important states with significant oil and gas development activity, but with two or fewer approved APDs on public lands in FY 2012 -- Pennsylvania and West Virginia -- both have robust regulations governing hydraulic fracturing. In short, there is no gap in the regulation of hydraulic fracturing justifying BLM's proposed rule.

We have carefully reviewed the administrative record for this rulemaking. It is highly significant what the rulemaking record lacks. BLM cannot point to a single instance where there was an environmental problem related to hydraulic fracturing that BLM's proposed rule would have prevented where state regulation did not adequately address the issue. So the problem with BLM's position is not simply that states have hydraulic fracturing rules on the books, but rather that the proposed rule does not provide any benefit commensurate with the costs it will impose. BLM has no evidence that its costly proposed rule will be any more effective in practice than state regulations protecting water and other environmental values.

There Is No Evidence that Hydraulic Fracturing Has Contaminated Groundwater

The chief concern BLM has identified in support of its promulgation of a hydraulic fracturing rule is a public "concern about whether fracturing can lead to or cause the contamination of underground water sources[.]"[4] This concern has been the subject of frequent technical reports, finding not only that hydraulically stimulated fractures in deeper formations have not penetrated drinking water aquifers, but also that principles of petrophysics indicate it is highly unlikely that such fractures could ever reach aquifers. These are facts that BLM must take into account in its rulemaking to avoid an unlawfully arbitrary rule.

Preliminary results from the most recent study were reported on July 19, 2013. In this study, the National Energy Technology Laboratory is monitoring a group of Marcellus Shale wells in Greene County, Pennsylvania. The Associated Press reported that "[d]rilling fluids tagged with unique markers were injected more than 8,000 feet below the surface at the gas well bore but weren't detected in a monitoring zone at a depth of 5,000 feet. The researchers also tracked the maximum extent of the man-made fractures, and all were at least 6,000 feet below the surface."[5]

Other studies and statements of public officials are well-known to BLM and are summarized here.

[4] 78 Fed. Reg. 31,636, 31,636 (May 24, 2013).

[5] K. Begos, "DOE Study: Fracking Chemicals Didn't Taint Water" (July 19, 2013), available at http://bigstory.ap.org/article/ap-study-finds-fracking-chemicals-didnt-spread.

Author	Statement	Citation
Sally Jewell, Secretary of the Dep't of Interior	"I know there are those who say fracking is dangerous and should be curtailed, full stop. That ignores the reality that it has been done safely for decades and has the potential for developing significant domestic resources and strengthening our economy and will be done for decades to come."	Real Clear Energy website, *The Daily Bulletin* (May 20, 2013)
Lisa Jackson, former U.S. Environmental Protection Agency ("EPA") Administrator	"In no case have we made a definitive determination that [hydraulic fracturing] has caused chemicals to enter groundwater."	You Tube: Fox News Channel Clip (Apr. 30, 2012)
Lisa Jackson, former EPA Administrator	"I'm not aware of any proven case where [hydraulic fracturing] itself has affected water."	You Tube: Fox News Channel Clip (May 24, 2011)
Ken Salazar, former Secretary of the Dep't of Interior	"There's a lot of hysteria that takes place now with respect to hydraulic fracking, and you see that happening in many of the states... My point of view, based on my own study of hydraulic fracking, is that it can be done safely and has been done safely hundreds of thousands of times."	Energy in Depth recording of Ken Salazar speaking in front of the U. S. House of Representatives (Feb. 15, 2012)
Dr. Stephen Holditch, Dep't of Petroleum Engineering, Texas A&M University; member of DOE's SEAB Shale Gas Production Subcommittee	"I have been working in hydraulic fracturing for 40+ years and there is absolutely no evidence hydraulic fractures can grow from miles below the surface to the fresh water aquifers."	Written Testimony before U.S. Senate Committee on Energy & Natural Resources (Oct. 4, 2011)
Dr. Mark Zoback, Professor of Geophysics, Stanford University; member of DOE's SEAB Shale Gas Production Subcommittee	"Fracturing fluids have not contaminated any water supply and with that much distance to an aquifer, it is very unlikely they could."	"Extracting natural gas from shale can be done in an environmentally responsible way, says Stanford researcher on government panel," Louis Bergeron, *Stanford Report* (Aug. 30, 2011)
Warner, *et al.*	"The integration of multiple geochemical and isotopic proxies shows no direct evidence of	"Geochemical and isotopic variations in shallow

Author	Statement	Citation
	contamination in shallow drinking-water aquifers associated with natural gas extraction from the Fayetteville shale."	groundwater in areas of the Fayetteville shale development, north-central Arkansas, accepted for publication in APPLIED GEOCHEMISTRY (Apr. 25, 2013)
Warner, *et al.*	"The lack of geospatial association with shale-gas wells and the occurrence of this type of saline water prior to shale gas development in the study area…suggests that **it is unlikely that hydraulic fracturing for shale gas caused this salinization and that it is instead a naturally occurring phenomenon that occurs over longer timescales**."	"Geochemical evidence for possible natural migration of Marcellus Formation brine to shallow aquifers in Pennsylvania" at 11963 (May 10, 2012), available at: www.pnas.org/cgi/doi/10.1073/pnas.1121181109
Duke University	"The study found elevated levels of salinity with similar geochemistry to deep Marcellus brine in drinking water samples from three groundwater aquifers, but no direct links between the salinity and shale gas exploration in the region."	"Marcellus Brine Migration Likely Natural, Not Man-Made", *Duke Today* (July 9, 2012)
Boyer, *et al.*	"In this study, statistical analyses of post-drilling versus pre-drilling water chemistry **did not suggest major influences from gas well drilling or hydrofracturing** (fracking) on nearby water wells, when considering changes in potential pollutants that are most prominent in drilling waste fluids."	"The Impact of Marcellus Gas Drilling on Rural Drinking Water Supplies" at 4, *The Center for Rural Pennsylvania* (Oct. 2011)
New York State Dep't of Environmental Conservation	"A supporting study for this dSGEIS concludes that it is highly unlikely that groundwater contamination would occur by fluids escaping from the wellbore for hydraulic fracturing. The 2009 dSGEIS further observes that regulatory officials from 15 states recently testified that groundwater contamination as a result of the hydraulic fracturing process in the tight formation itself has not occurred."	"Revised Draft Supplemental Generic Environmental Impact Statement On The Oil, Gas and Solution Mining Regulatory Program" (dSGEIS), Executive Summary at 11 (Sept. 7, 2011)
Ohio Dep't of Natural Resources, Mineral Resources Management	"Although an estimated 80,000 wells have been fractured in Ohio, state agencies have **not identified a single instance where**	"State Review of Oil and Natural Gas Environmental

Author	Statement	Citation
	groundwater has been contaminated by hydraulic fracturing operations."	Regulations, Inc. (STRONGER)," *Ohio Hydraulic Fracturing State Review* (Jan. 2011)
MIT Energy Initiative	"In the studies surveyed, **no incidents are reported which conclusively demonstrate contamination** of shallow water zones with fracture fluids."	"The Future of Natural Gas" at 40, MIT Study (2010)
U.S. Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory	"[B]ased on over sixty years of practical application and a lack of evidence to the contrary, there is nothing to indicate that when coupled with appropriate well construction[,] the practice of hydraulic fracturing in deep formations endangers ground water. There is also a **lack of demonstrated evidence that hydraulic fracturing conducted in many shallower formations presents a substantial risk of endangerment to ground water**."	"State Oil and Natural Gas Regulations Designed to Protect Water Resources" at 39 (May 2009), available at: http://www.gwpc.org/sites/default/files/state_oil_and_gas_regulations_designed_to_protect_water_resources_0.pdf.
U.S. EPA	"Although thousands of CBM wells are fractured annually, **EPA did not find confirmed evidence** that drinking water wells have been contaminated by hydraulic fracturing fluid injection into CBM wells."	"Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs Study," Office of Water, Office of Ground Water and Drinking Water (4606M), EPA 816-R-04-003, Executive Summary at 1 (June 2004)
U.S. Geological Survey	"Comparative analyses demonstrated that **maximum and median chloride concentrations for data from this study were below that of historical (prior to gas production) chloride concentrations,** and, more importantly, that **chloride concentrations for wells less than 2 miles from gas-production wells were not significantly different from chloride concentrations more than 2 miles from gas-production wells.** Additionally, groundwater-quality data collected	"Shallow Groundwater Quality and Geochemistry in the Fayetteville Shale Gas-Production Area, North-Central Arkansas, 2011" U.S. Geological Survey, Scientific Investigations Report 2012–5273 (January 2013)

Author	Statement	Citation
	for this study indicated that groundwater chemistry in the shallow aquifer system in the study area is a result of natural processes, controlled by geochemical rock-water interaction and microbially mediated redox reactions."	
U.S. Geological Survey	"A study that examined the water quality of 127 shallow domestic wells in the Fayetteville Shale natural gas production area of Arkansas found **no groundwater contamination associated with gas production**, according to a report released today by the U.S. Geological Survey."	"No Contamination from Fayetteville Shale Exploration Found in Sampled Wells" U.S. Geological Survey Release (January 9, 2013)
CardnoEntrix	"Groundwater beneath the Inglewood Oil Field is not a source of drinking water, although the water quality must meet the standards for such a source. Groundwater beneath the Baldwin Hills is geologically isolated from the surrounding Los Angeles Basin and any water supply wells. Routine tests by the water purveyor show the community's water supply meets drinking water standards, including the period of high-rate gravel packs and conventional hydraulic fracturing, as well as the first high-volume hydraulic fracture in September 2011. In addition, the Inglewood Oil Field has an array of groundwater monitoring wells to measure water quality. Apart from arsenic, which is naturally high in groundwater of the Los Angeles Basin, the analyzed constituents meet drinking water standards. **Before-and-after monitoring of groundwater quality in monitor wells did not show impacts from high-volume hydraulic fracturing** and high-rate gravel packing."	"Hydraulic Fracturing Study: PXP Inglewood Oil Field" at 2-3 (Oct. 10, 2012)
U.S. Government Accountability Office	"**Fractures created during the hydraulic fracturing process are generally unable to span the distance between the targeted shale formation and freshwater bearing zones** … When a fracture grows, it conforms to a general direction set by the stresses in the rock, following what is called fracture direction or orientation. The fractures are most commonly vertical and may extend laterally several hundred feet away from the well, usually growing upward	"Information on Shale Resources, Development, and Environmental and Public Health Risks" at 46-49, GAO-12-732 (Sept. 2012)

Author	Statement	Citation
	until they intersect with a rock of different structure, texture, or strength. These are referred to as seals or barriers and stop the fracture's upward or downward growth... In addition, regulatory officials we met with from eight states – Arkansas, Colorado, Louisiana, North Dakota, Ohio, Oklahoma, Pennsylvania, and Texas – told us that, based on state investigations, **the hydraulic fracturing process has not been identified as a cause of groundwater contamination** within their states."	

The vast majority of wells completed by hydraulic fracturing involve geological formations thousands of feet below drinking water aquifers. And improvements in the technology of fracturing have allowed a similar record of safety over the last decade in shallow gas reservoirs as well.

Pioneer Natural Resources USA, Inc., for example, operates 2,400 wells in the Colorado portion of the Raton Basin. These wells are in the main coal bed methane wells, producing gas from up to 20 coal seams at depths ranging from 3,500 feet to as shallow as 450 feet from the surface. EPA has reported the results of Pioneer's fracturing program. "Analysis of data from 2,273 Pioneer [hydraulic fracturing] jobs since late 2001 shows that more than 12,000 individual hydraulic fracture stages were executed. . . . To date, with more than 12,000 stages pumped, there have been no instances where Pioneer's hydraulic fracture fluids or pressures impacted underground sources of drinking water."[6]

Furthermore, at the depths at which most hydraulic fracturing is conducted, petrophysics dictates that the energy hydraulic fracturing disperses into a rock formation tends to spread more horizontally than vertically. "A number of factors control the height growth of a fracture, but the relative difference between the stresses in and around the fracture is the most important factor. Fractures tend to remain in low stress vertical regions that effectively 'lock in' or 'trap' the fracture and keep it from breaking into higher stress rock."[7] In other words, how a fracture spreads is "dictated by the in situ stress that exists at the hydraulic fracture location . . . . Fractures will propagate in the same direction all across a field."[8]

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[6] H. Macartney, "Hydraulic Fracturing in Coal Bed Methane Development, Raton Basin, Southern Colorado, USA," U.S. Environmental Protection Agency, PROCEEDINGS OF THE TECHNICAL WORKSHOPS FOR THE HYDRAULIC FRACTURING STUDY: WELL CONSTRUCTION AND OPERATION at 70, EPA 600/R-11/046 (May 2011).

[7] T. Beard, "Fracture Design in Horizontal Shale Wells – Data Gathering to Implementation," U.S. Environmental Protection Agency, PROCEEDINGS OF THE TECHNICAL WORKSHOPS FOR THE HYDRAULIC FRACTURING STUDY: WELL CONSTRUCTION AND OPERATION at 65, EPA 600/R-11/046 (May 2011).

[8] *Id.* at 81.

When this fact is coupled with the fact that rock formations underground are "layered," this combination "makes vertical fracture height growth difficult, thus generally promoting the growth of length over height."[9] An analysis of microseismic studies of fracturing operations in the Barnett Shale has shown that "fracturing does not intrude on the aquifers. There is a limit to how much a fracture can grow vertically, even in the most advantageous conditions."[10]

The most recent analysis of this issue reaches similar conclusions. Hydraulic fracturing operations are brief. Their purpose is to create a zone of lower pressure around the wellbore so that gas and liquids flow toward the well, not up and away from the well. "After an HF stimulation, hydrocarbon extraction creates a low pressure zone that draws fluids toward the target formation, thereby eliminating any potential for upward flow."[11] For that reason, "widespread and rapid upward migration of [hydraulic fracturing] fluid and brine through bedrock is not physically plausible."[12]

There is, in sum, no evidence in the record that regulation through existing state regimes has been inadequate to protect groundwater, the goal BLM expressly seeks here.

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[9] N. Warpinski, "Measurements and Observations of Fracture Height Growth," U.S. Environmental Protection Agency, Proceedings of the Technical Workshops for the Hydraulic Fracturing Study: Well Construction and Operation at 81, EPA 600/R-11/046 (May 2011).

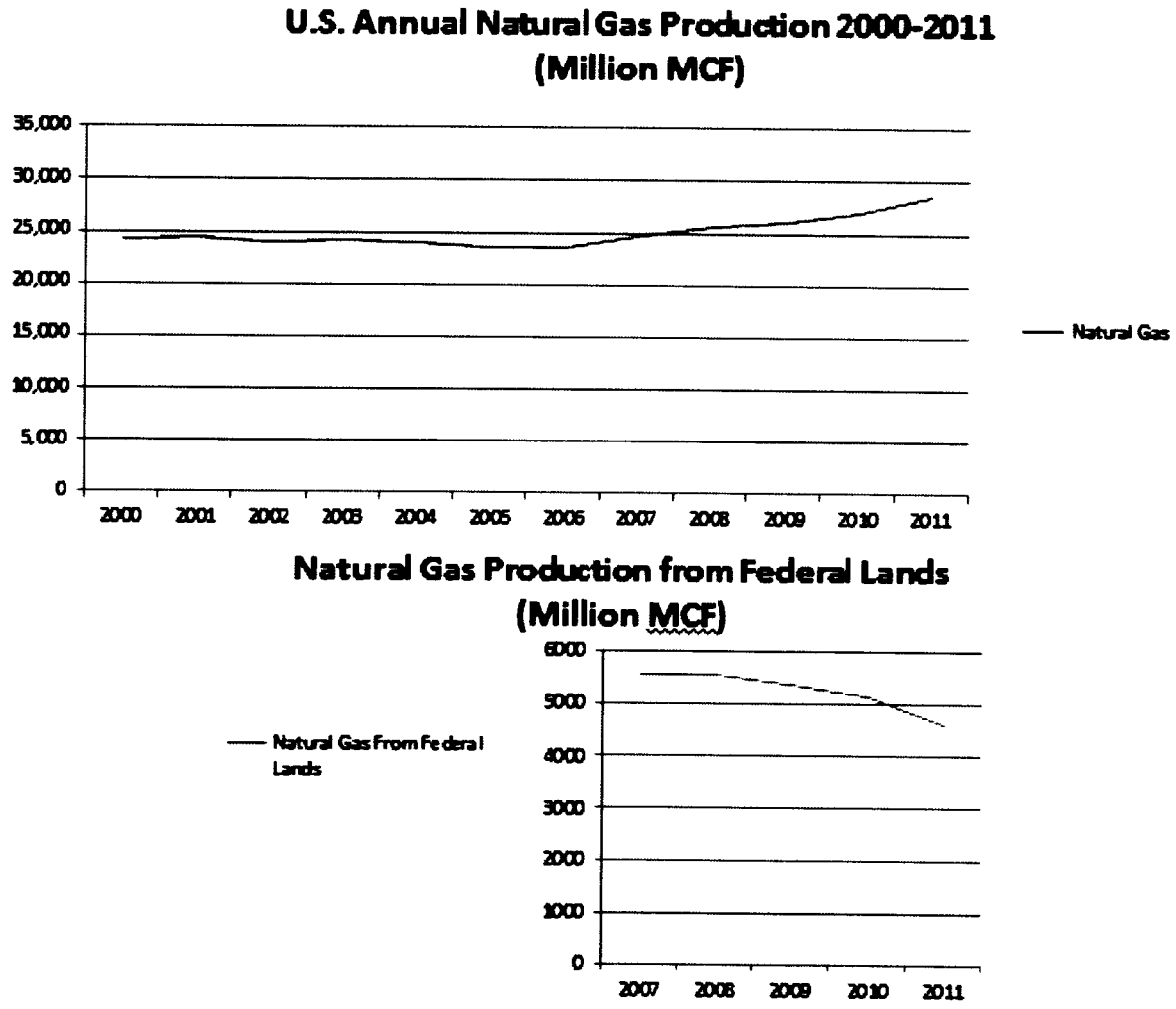
[10] *Id.* at 85.

[11] S. Flwelling and M. Sharma, "Constraints on Upward Migration of Hydraulic Fracturing Fluid and Brine," [2013] GROUNDWATER at 2 (accepted for publication June 2013), available at www.NGWA.org.

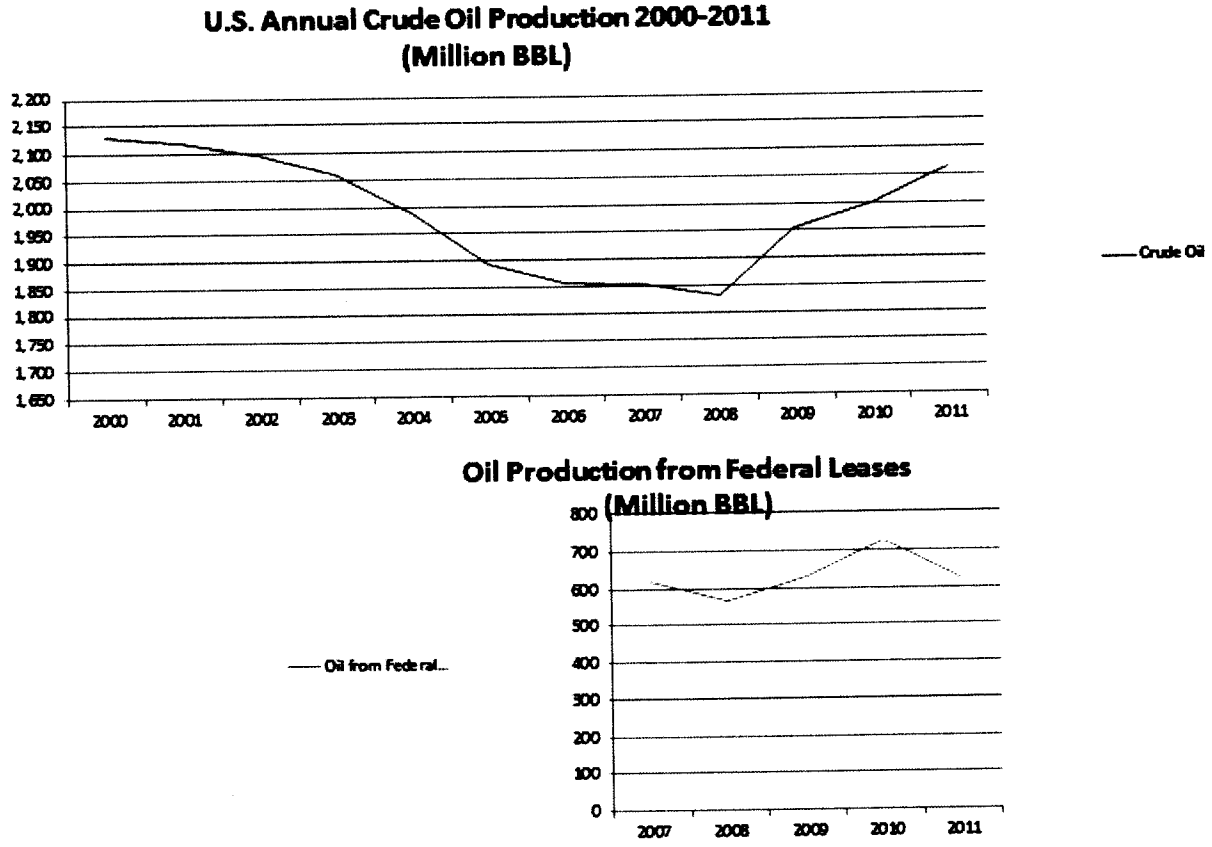
[12] *Id.*

BLM's Proposal Will Worsen BLM's Already Slow Record in Approving APDs

While national production of crude oil and natural gas has increased, crude oil and natural gas production from federal leases is in decline.



Source: http://www.eia.gov/dnav/ng/hist/n9010us2A.htm &
http://eenews.net/Greenwire/print/2012/02/27/4



Source: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpus1&f=a & http://eenews.net/Greenwire/print/2012/02/27/4

The obvious question is "why?"

BLM's own statistics reveal inordinate delays between receipt of an APD and approval of it: 162 days in Farmington, New Mexico, 181 days in Dickinson, North Dakota, 211 days in Canon City, Colorado, 215 days in Price, Utah, 226 days in Meeker, Colorado, 233 days in Lander, Wyoming, 271 days in Rawlings, Wyoming, 359 days in Milwaukee, Wisconsin, 518 days in Kemmerer, Wyoming, 635 days in Moab, Utah, and 952 days in Buffalo, Wyoming.[13]

The effect of delays in leasing and permitting have resulted in declining production from federal onshore leases. Operators are investing in lands under private lease, where state permitting is quicker and regulation is more predictable. In Colorado, for example, development of the Niobrara shale thrives in Weld County, but is stymied in Routt County. The chief difference is that the bulk of the leases in Weld County are private, the bulk in Routt County are federal. The proposed rule will only result in driving even more oil and gas investment off the public lands.

[13] S. Zimmerman, *Western Lands and Energy Newsletter* (June 26, 2013), available at http://www.nortonrosefulbright.com/knowledge/publications/100086/western-lands-and-energy-newsletter.

The Associations Support the Use of FracFocus

We support that part of the proposed rule that requires operators to report fluids and additives used in hydraulic fracturing operations on the FracFocus website.[14] FracFocus strikes the proper balance between substantial disclosure of additives used in hydraulic fracturing operations and protection of trade secrets service suppliers develop to improve the quality and safety of those operations. Operators are familiar with FracFocus and have been using the site consistently to disclose chemical usage for the past several years; more than 50,000 wells are currently registered with the site. As the National Energy Technology Laboratory has recognized, FracFocus is a valuable database for the public and for regulators.[15] It is appropriate to require its use for wells drilled on federal and Indian lands.

TECHNICAL CONCERNS

As discussed above, there are significant policy reasons why BLM should not proceed with the proposed rulemaking. Although we firmly believe that this proposed rule is unnecessary, we recognize that it is possible BLM will proceed with the rulemaking. It is therefore our responsibility also to address our numerous concerns regarding both the technical requirements that the rule would impose and the cost-benefit analysis for the proposed rule. These issues are introduced below and more fully discussed in the remainder of this document.

- Oil and gas agencies should continue to identify usable water zones. Currently, state oil and gas agencies and BLM field offices identify the formations that must be protected. This is effective and cost-efficient and should not be changed. Operators should not be required to submit total dissolved solids ("TDS") data or otherwise identify usable water zones. If operators are required to supply the data, the costs would likely be approximately $28.4 million to $42.5 million per year.

- SDWA exemption criteria should be fully incorporated. The proposed protection of "usable water" provisions would exempt water zones that agencies implementing the Safe Drinking Water Act ("SDWA") have formally exempted. If BLM abandons prior practice and adopts the more rigid and expansive definition of "usable water" in the proposal, it must further modify the proposed definition by directly incorporating the SDWA exemption criteria into the proposed rules and by adding water zone flow rates as an exemption criterion. This will allow BLM field offices reviewing Notices of Intent Sundry to determine which zones need to be protected.

- Additional costs for the protection of usable water. The proposed protection of "usable water" provisions are more stringent than the usable water provisions in Onshore Order No. 2, because Onshore Order No. 2 allows separation and segregation of zones and does not require cement behind pipe for every usable water zone. This increased stringency could cost approximately $310 million per year.

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[14] Proposed 43 C.F.R. § 3162.3-3(i)(1).

[15] NETL News Release (Apr. 18, 2013), available at: http://www.netl.doe.gov/publications/press/2013/130418_hydraulic_fracturing.html.

- Cement evaluation logs ("CELs") for certain casing strings. CELs are not needed for casing strings for which cement is circulated to surface. BLM has failed to establish that CEL data will identify inadequacies in cement jobs that currently-used cement integrity verification measures do not detect. CELs should not be required for casing strings where cement is circulated to surface and should not be relied upon as the sole diagnostic tool to evaluate cement integrity.

- Cement repair provisions will decrease well integrity. The cement repair provisions in the proposed rule rely improperly on an easily-triggered single "indicator" of inadequate cement, overemphasize qualitative CEL data, and do not account for the full suite of diagnostic indicators operators consider to determine whether repairs are needed. As a result, repairs will be required where none are actually needed, a condition that threatens -- not ensures -- wellbore integrity. The proposal should be amended to address these concerns. If the proposal is not amended, BLM must include as part of its economic analysis the costs associated with unnecessary repairs and decreased well integrity.

- Cement repair should not be the remedy of first resort. Even when the evidence suggests that a cement job may be inadequate, other measures should be considered before BLM requires the operator to perforate the casing and perform remedial cementing. It may be more appropriate to test the adequacy of the cement shoe by pressure testing the shoe. It may be more appropriate to require the operator to install an annulus gauge at the surface and monitor the gauge for indications that fluids are increasing pressure in the annulus. BLM should not foreclose practical alternatives to remedial cementing.

- Clarifications are needed for type wells. If a CEL requirement is retained in the final rule, the scope of the "type well" concept should be clarified as generally applying to a "field," meaning a geographical area overlaying one or more hydrocarbon reservoirs. In addition, BLM should allow use of the type well exemption for wells that were not included in the same Group Notice Sundry as the type well.

- Cement monitoring and CEL provisions should not apply to existing wells. As currently drafted, the proposed rule would require cement operations monitoring and CELs before hydraulic fracturing on an existing well that has not previously been hydraulically fractured. Satisfying these requirements will not be possible; therefore, this retroactive requirement will result in the premature abandonment of numerous existing wells. Costs would include capital writeoffs, lost reserves, lost royalties, and replacement well drilling expenses.

- CEL delay costs have been underestimated. BLM is severely underestimating the delays associated with running CELs for surface and intermediate casing strings. The agency's assumed per-hour delay costs also appear to be too low. As proposed, the CEL provisions will result in approximately $7.6 million per year of additional costs.

- No additional cementing for existing wells. BLM should amend the proposed rule to allow existing wells that will be fractured or refractured to continue to meet the

protection of groundwater standards in place when the wells were first completed. Without this amendment, BLM will subject many wells to expensive workovers and some to premature retirement. If the cement repair provisions are not amended, BLM must include as part of its economic analysis the costs associated with workovers, lost capital assets, and the drilling of replacement wells.

- Cutoff between flowback and production. BLM requested feedback on when fracturing flowback ends and production begins. There is no reason for BLM to distinguish between fracturing fluid flowback and produced water. From an operational perspective, these fluids are indistinguishable. BLM should use a more realistic nomenclature such as "recovered water" in defining management options for this waste stream. Should BLM insist on drawing such a distinction, however, we do not favor a cutoff based on sales because certain regulatory requirements, such as EPA's emissions standards for the oil and gas sector, may require the sale of oil and gas during flowback. A time-based cutoff, to be determined on a field-by-field basis, would be clearer and simpler.

- Tanks should not be the only recovered fluids option. BLM should retain the current proposed requirement that operators manage recovered fluids in either lined pits or storage tanks. There are economic, environmental, and operational advantages to each and operators should have the flexibility to choose the solution most appropriate under various circumstances. Management in storage tanks is estimated to cost approximately $19.6 million per year and at least $9.4 million more than using temporary lined pits. Costs for long-term storage facilities would be even higher.

- Trade secret protections should be expanded. We endorse the proposed provisions that would allow the submission of data via FracFocus and that would allow protection for trade secret information. The proposed rule affords trade secret protection, however, only to information that would be submitted after a hydraulic fracturing operation. We request that BLM expand the trade secret provisions to information required to be submitted in the Notice of Intent Sundry, such as fracture length and orientation data.

- Costs for fracture modeling. We request that BLM allow the use of fracture data gathered and modeled for similar wells, as opposed to requiring new modeling for every well. If modeling is required for every well, we estimate that annual costs will increase by at least $15.4 million per year or more, depending on the sophistication of the modeling required.

- Deviation reporting should be eliminated. The deviation reporting requirement in the proposed rule will be a significant administrative burden on operators, because natural variation will result in some degree of variation between predicted and observed values with respect to almost every piece of information submitted after a hydraulic fracturing operation. Instead of deviation reporting, BLM should identify any deviations it considers important based on its review of operators' completion reports and then submit those specific concerns to operators for explanation.

- Certification requirements should be more flexible. In light of the nature of oil and gas operations, including the number of contractors involved in drilling and completing a well and the prevalence of trade secret information, the certification requirements require more flexibility than currently proposed. Foremost, service providers -- not operators -- should be required to submit and certify the service provider's own data. In addition, the certification should be based only on data available at the time of certification.

- Variance provisions are too easily revoked or amended. We agree that variance provisions should be included in the final rule and that the BLM should establish a mechanism for states to substitute their existing rules for the BLM's proposed provisions. To ensure both equivalency of standards and predictability, however, the process must be better defined. We are also concerned with BLM's proposal that the agency may revoke or amend granted variances based on a policy change or for "other reasons."

- Total costs of the rule have been underestimated. Based on an economic analysis included in Appendix A, we believe that total costs for the rule are likely to be on the order of approximately $345 million per year or more. BLM has significantly underestimated the costs its proposed rule would impose.

- Benefits analysis is insufficient to support the rule. The purported benefits of the rule are exceedingly uncertain. Although BLM's risk analysis incorporates some numerical assumptions, there appear to be significant errors in the limited amount of numerical data BLM discusses. BLM's arbitrary risk analysis exacerbates its failure to accurately assess the costs associated with the rule.

- Alternatives analysis is inadequate. The alternatives analysis BLM prepared is inadequate because it focuses primarily on whether liners should be required for pits, an issue that the BLM estimates would cost $9 per well (less than 0.03% of total costs). For the alternatives analysis to be meaningful, BLM must at least assess an alternative that does not impose a CEL requirement for surface casing. This requirement alone comprises at least sixty-three percent of BLM's projected costs.

- BLM must comply with statutory and executive order mandates. We estimate that costs will significantly exceed $100 million per year. Because of the costs the rule will impose, BLM is legally required to reconsider and amend its analyses under: (i) Executive Order 13563; (ii) Executive Order 12866 (Regulatory Planning and Review); (iii) the Regulatory Flexibility Act of 1980; (iv) the Small Business Regulatory Enforcement Fairness Act; (v) the Unfunded Mandates Reform Act; and (vi) the National Environmental Policy Act ("NEPA").

- Feedback on deferrals to state and tribal laws. BLM requested feedback on the enforcement challenges associated with BLM's deferral to state or tribal laws and procedures. We believe that BLM could incorporate state and tribal requirements in a manner that would not limit the agency's enforcement powers.

I. PROTECTION OF "USABLE WATER"

BLM's original hydraulic fracturing rule proposal would have eliminated the term "fresh water" from 43 CFR Part 3160, defined "usable water" as generally those containing up to 10,000 parts per million ("ppm") TDS, and replaced a provision requiring the protection of fresh water and water zones with 5,000 ppm or less TDS with a provision requiring the isolation of all usable water zones.

The revised proposal keeps the 10,000 ppm TDS threshold for usable water and clarifies that usable water includes: (i) sources of drinking water that EPA or state law designate expressly; (ii) zones actually used to supply water for agricultural or industrial users; and (iii) zones a state or tribe have designated as requiring protection. The revised proposed rule would exclude from protection those zones designated pursuant to the SDWA as "exempted aquifers" and zones which the state or tribe has designated as exempt from isolation requirements. Usable water zones would be identified "by use of a drill log from the subject well or another well in the vicinity and within the same field."[16]

We have a number of technical concerns with the protection of "usable water" provisions. These concerns are briefly summarized below and then discussed in greater detail in the remainder of this section.

- The "exempted aquifers" provision is largely useless from a practical perspective, because the exemption process is intended for actual injection wells and can be time-prohibitive. BLM should instead incorporate the SDWA exemption criteria into the actual definition of "usable water," in addition to excluding zones that have received a formal SDWA exemption.

- Under current practice, state oil and gas agencies and BLM field offices inform operators about water resources that must be protected, taking into account local geology. In North Dakota, for example, the state requires that surface casing be set at least fifty feet below the base of the Fox Hills formation.[17] For wells drilled in the Jonah Field or to the Lower Fort Union and Lance formations in southeastern Wyoming, the BLM Rock Springs Field Office requires surface casing to a depth of 2,500 feet and production casing with the top of cement 400 feet above the top of the Lance Formation (or above the highest gas sand, whichever is shallower). The proposed rule upsets this locally-sensitive practice and imposes a costly burden for operators to identify all usable water zones, irrespective of localized geographic and geologic considerations. Costs to sample potential usable water zones are estimated to be in the range of $100,000 to $150,000 per well. Even if this data is gathered only for type wells, average costs would be approximately $8,000 to $12,000 per well.

- Contrary to BLM's assertions, the proposed rule's provisions related to the protection of usable water represent an expansion of Onshore Order No. 2's requirements and will therefore increase costs. Some wells will be unaffected or will need only minor changes

[16] 78 Fed. Reg. 31,636, 31,675 (May 24, 2013).

[17] N.D. Admin. Code § 43-02-03-21.

in casing and cement design, but some may need an entirely new string of intermediate casing. This could be up to the equivalent of 2,350 additional feet of casing at a cost of approximately $310 million. Even if the rule will mandate only the equivalent of 1,000 feet of additional casing, the added cost would still be approximately $132 million.

We request that BLM modify the proposed regulatory definition of usable water to account for existing practice and for consistency with the agency's application of Onshore Order No. 2.

> Strike proposed § 3160.0-5 *Usable water* [definition] and replace with:
>
> *Usable water* means water in those underground formations which a State (for Federal lands) or a tribe (for Indian lands) requires to be protected from oil and gas operations by surface casing.

- The expansion in requirements for the protection of usable water may result in a prohibition on fracturing or re-fracturing existing wells or result in operators having to conduct squeeze cementing operations before conducting hydraulic fracturing operations on these wells.

Background on TDS in Groundwater

To put BLM's proposed use of 10,000 ppm of TDS into a more practical perspective, we begin with a summary of how humans respond to varying concentrations of TDS in water. The World Health Organization has noted the effects of TDS on how palatable water is to humans. The taste of water with less than 300 ppm is rated "excellent," of water with between 300-600 ppm—"good," of water with between 600-900 ppm—"fair," of water with between 900-1,200 ppm—"poor," and of water with greater than 1,200 ppm—"unacceptable."[18] EPA has set a secondary "maximum contaminant level" for TDS at 500 ppm for drinking water.[19]

Recommended maximum levels for TDS for water for crops and livestock are also far below BLM's 10,000 ppm proposed standard. In Colorado, irrigation water exceeding a state guideline of 2,000 ppm is classified as "unsuitable."[20] The North Dakota State University Extension Service advises farmers and ranchers that water quality for animals is "good" if it generally has

[18] World Health Org., "Total dissolved solids in Drinking-water" (2003), available at http://www.who.int/water_sanitation_health/dwq/chemicals/tds.pdf.

[19] EPA, "Secondary Drinking Water Regulations: Guidance for Nuisance Chemicals," available at http://waterepa.gov/drink/contaminants/secondarystandards.cfm.

[20] Bauder, et al., *Water Quality for Irrigated Agriculture - Salinity/Sodicity Focus* at 9, available at: http://waterquality.colostate.edu/documents/irrigationwaterquality.pdf.

less than 2,000 ppm of TDS.[21] Water with 10,000 ppm or more "may cause brain damage or death" in livestock.[22]

One questions what it is about water with 10,000 ppm of TDS that is "usable"? The sole answer is that it is a criterion drawn from EPA regulation of underground injection of potential contaminants under the SDWA. BLM's incorporation of that criterion here represents an arbitrary analogy, because hydraulic fracturing is generally exempt from the underground injection control ("UIC") program promulgated under that statute.

The history of both the SDWA and EPA regulation under that statute reveals three telling points. First, the SDWA itself did not adopt the 10,000 ppm standard. Second, when EPA adopted the standard, it did not do so based on any scientific study of the usability of water with that high a level of dissolved solids. EPA instead selected the figure because it had appeared in a House of Representatives report on the bill.[23] Third, EPA acknowledged that "some aquifers below the 10,000 [ppm] level are so contaminated that as a practical matter they are not potential drinking water sources."[24]

Incorporation of the SDWA's Exclusion Criteria

Under the SDWA, an "underground source of drinking water" is a non-exempt aquifer which supplies any public water system, or contains a sufficient quantity of ground water to supply a public water system, and either currently provides drinking water for human consumption or contains less than 10,000 ppm TDS.[25]

"Exempted aquifers" are those which have been previously determined to meet the following criteria: (i) not serving as a source of drinking water; or (ii) cannot and will not in the future serve as a source of drinking water due to the presence of mineral, hydrocarbon, or geothermal resources, depth or location that makes recovery for drinking water technically or economically impractical, contamination, or location over a Class III well mining area subject to subsidence or catastrophic collapse.[26]

BLM's revised rule references the above provision, but does so in a way that will make little difference to operators. To start, BLM does not incorporate the actual criteria for exempted aquifers into the rule so that operators can consider the criteria when preparing Notices of Intent Sundry, and BLM field offices may refer to the criteria when evaluating those Notices. The agency instead states that zones implementing agencies designate as exempted aquifers under the SDWA are generally excluded from being considered "usable water."

As a result, to avoid protecting a zone that meets the exclusion criteria an operator would have to apply to the EPA or an SDWA-delegated state or tribal agency for a formal exemption. This is a

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[21] G. Lardy *et al.*, "Livestock and Water," Table 9 (NDSU Extension Service June 2008).

[22] *Id.*

[23] 41 Fed. Reg. 36730, 36733 (1976).

[24] *Id.*

[25] 40 C.F.R. § 146.3.

[26] 40 C.F.R. § 146.4(a).

lengthy process because it was designed for exemptions allowing long-term injection into a reservoir. This is not a process designed for the protection of non-injection ground water zones.

An example helps to illustrate the practical difficulties of using the current version of the exemption. Suppose there are five zones, A through E, that are technically "usable water" zones, but also meet the exemption criteria and are useless for practical purposes. An operator who wants to use reservoir A for disposal by pumping millions of gallons of produced water and residual associated hydrocarbons into the zone, could apply for and receive an exemption for reservoir A under the SDWA. An operator who simply wishes an exemption from considering these zones "usable water" under the BLM's proposal, and who will not be actively pumping anything into the reservoir, would also have to apply for exemption. And unlike the former operator who would need an exemption only for the injection zone, the latter operator would need to apply for and receive exemptions for all five zones, A through E. This makes the exemption very difficult to use.

We note that BLM likely drafted its exclusion criteria on the assumption that many or even most zones of concern have already been through the SDWA exemption process and that information regarding exempted reservoirs would therefore be readily available to operators. Unfortunately, this is not the case. We contacted EPA and many other delegated SDWA agencies and confirmed that there are no state or federal databases of exempted reservoirs. Further, most exemptions are granted on a well-by-well basis and not on a reservoir-wide basis, so that, even if exemption data were available, it would likely not apply to the vast majority of wells.

The solution to the above issue is for BLM to incorporate the exclusion criteria into the definition of usable water in the proposed rule. This would allow operators and BLM field offices to exclude zones meeting the exclusion criteria without going through a formal exemption process. This would not circumvent the formal exclusion process under the SDWA because operators would not be seeking to actively inject into the excluded formations, making the scope of impacts wholly different. Further, the cement for the production casing across hydrocarbon zones will serve to prevent hydrocarbon migration into the excluded zones.

Finally, we note that BLM should include flow and overall volume as one of the exemption criteria. These are not SDWA exemption criteria, but volume is part of the EPA's definition of "underground source of drinking water." Unless these criteria are added as bases for exemption, "usable water" may include zones that produce very small volumes of water and are useless for all practical purposes, but otherwise meet the usable water definition.

Again, we urge BLM to continue following current practice and adopt the text IPAA has proposed on page 19 of these comments. If BLM refuses, it should at least adopt the following regulatory text concerning usable water:

Definition of Usable Water
Proposed Change to BLM proposed 43 C.F.R. § 3160.0-5:

Usable water means generally those waters containing up to 10,000 parts per million (ppm) of total dissolved solids. The following geologic zones are deemed to contain usable water:[27]

...

(4) Zones known to contain less than 10,000 ppm of total dissolved solids that are not excluded by paragraphs (A), (B), (C), or (D) of this definition. The following geologic zones are deemed not to contain usable water:

(A) Zones from which an operator is authorized to produce hydrocarbons;

(B) Zones designated as exempted aquifers pursuant to the Safe Drinking Water Act;

(C) Zones which the State (for Federal lands) or the tribe (for Indian lands) has designated as exempt from any requirement to be isolated or protected from oil and gas operations; and

(D) Zones which cannot now and will not in the future serve as a source of drinking water because:

(i) It contains insufficient volume or provides insufficient flow to supply a public water system;

(ii) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;

(iii) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impossible;

(iv) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

(v) It is located over a Class III well mining area subject to subsidence or catastrophic collapse.

[27] As discussed above, we believe that defining usable water based on the amount of total dissolved solids is arbitrary and inconsistent with BLM's historic practice. If BLM insists on retaining its proposed definition, however, we offer the regulatory language contained in this box.

Operators Should Not Bear The Compliance Burden of Identifying All Usable Water

As previously noted, the proposed rule will require the protection of "usable water" based on the use of a drill log from the subject well or another well in the vicinity and within the same field. The preamble to the proposed rule states that, as a matter of industry practice, operators typically maintain drill logs identifying usable water zones.[28] This is not correct.

The primary threshold indicator in the proposed definition of "usable water" is a TDS level of 10,000 ppm. No logging tool directly measures TDS. Operators often run resistivity logs for intermediate and production casing[29] and these logs might allow the qualitative identification of high salt content zones. These logs do not, however, directly measure TDS and there are too many variables for the signature these logs record to be converted into accurate TDS data. In fact, when our members apply for an injection permit under the SDWA they are sometimes required to collect a sample of the formation fluid and to then analyze the sample to determine properties such as TDS.

Current practice is not for operators to identify usable water zones for protection and then submit the information to state oil and gas agencies or the BLM field offices for approval, but instead for these agencies to tell operators which zones must be protected. The proposed rule fundamentally alters this practice, placing an increased and substantial burden on operators.

BLM has not identified any data showing that current practice has resulted in a lack of protection for "usable water zones." In the absence of this data, requiring operators to undertake lengthy and expensive projects to individually generate TDS data is unnecessary and inefficient. In many cases, it would require that operators sample multiple water formations to determine whether TDS is above or below 10,000 ppm. In some cases, operators may need to drill a well for the express purpose of sampling water formations.

Based on the above, we request that BLM implement the following rule changes:

Protection of Usable Water

Proposed Change to BLM proposed 43 C.F.R. § 3162.3-3(d)(2):

(2) The operator may include in the Notice of Intent Sundry any water formation or water quality data that the operator believes supports a determination by the authorized officer that a water source is not usable water and is not required to be protected pursuant to 43 CFR § 3162.5-2. Otherwise, the authorized officer will determine usable water based on the zones a State (for Federal lands) or a tribe (for Indian lands) requires to be protected by well casing from oil and gas operations.

Proposed Change to BLM proposed 43 C.F.R. § 3162.5-2(d):

[28] 78 Fed. Reg. 31,636, 31,662 (May 24, 2013).

[29] Resistivity logs are less common for surface casing.

(d) *Protection of usable water and other minerals.* For each new well, the operator must protect and/or isolate all usable water zones and other mineral-bearing formations which a State (for Federal lands) or a tribe (for Indian lands) requires to be protected by well casing from oil and gas operations and as otherwise consistent with the requirements in Onshore Order Number 2, Drilling Operations, Section III.B. (January 27, 1992, 57 FR 3025).

Costs Associated with the Protection of "Usable Water"

Contrary to the BLM's Assertion, There Will Be Additional Cementing and Casing Costs

BLM maintains that the usable water provisions in the hydraulic fracturing rule will not increase costs for operators because the rule simply updates the rule to be consistent with Onshore Order No. 2. This argument appears to be premised on an incorrect belief that, like the proposed rule, Onshore Order No. 2 requires cement behind pipe across all usable water zones.

Onshore Order No. 2 was published in the Federal Register in November 1988 and addresses drilling operations located on Federal and Indian lands.[30] Among other provisions, Onshore Order No. 2:

- Defines "usable water" to mean "*generally* those waters containing up to 10,000 ppm of TDS." (*emphasis added*)

- Requires that casing and cementing programs "be conducted as approved to protect and/or isolate all usable water zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals" and requires BLM approval for the use of any isolating medium other than cement.

- Defines "isolating" to mean "using cement to protect, separate, or segregate usable water and mineral resources."

The inclusion of all three words, "protect," "separate," and "segregate," in the definition of "isolating" indicates that Onshore Order No. 2 does not require cement contacting all usable water zones. For example, cement behind the production casing that covers all hydrocarbon productive zones would segregate the hydrocarbon zones from the usable water zones regardless of whether there is cement across all usable water zones.

Additional support is found in BLM's Instruction Memorandum No. 92 (October 31, 1992), which established guidance for oil and gas drilling operations.[31] In the section addressing production casing, the Instruction Memorandum states that the casing string must be cemented so that exposed usable quality water zones "are covered or isolated." The quoted language clearly indicates that isolation, as the word is used in Onshore Order No. 2, is distinct from covering a zone with cement.

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[30] 53 Fed. Reg. 46,798 (Nov. 18, 1988).

[31] Instruction Memorandum No. 92 is available at: http://www.ntc.blm.gov/krc/uploads/247/Drilling%20Manual-Handbook%203160-1.pdf.

Current webpages for BLM field offices in Wyoming further indicate that Onshore Order No. 2 does not require cement behind pipe for all usable water zones. The "Applications for Permit to Drill" webpage for BLM's Kemmerer Field Office in Wyoming states that the cementing program can protect usable water (less than 10,000 ppm TDS) by casing over the usable water entirely *or* by circulating cement above sources of contamination.[32]

In comparison, the proposed hydraulic fracturing rule will impose additional casing and/or cementing costs on operators because, unlike Onshore Order No. 2, the proposed rule would require cement behind pipe across all usable water zones. Even though the proposed rule uses the word "isolate," it uses the word differently than Onshore Order No. 2. This is clear from the requirement to run a CEL for each casing string that protects usable water and from the preamble to the original proposed rule, which stated that "[t]he best available means for the BLM to ensure that well stimulation activities do not contaminate aquifers is to require cement bond logs *for the cement behind the pipe along all areas intersecting usable water.*"[33]

Incremental costs associated with the expanded meaning of "isolation" in the proposed rule would include the following:

- Additional cement costs associated with cementing zones that may currently be isolated behind pipe without cement. Costs would result from larger volumes of cement and from the use of lighter, specialty cements to avoid exceeding the fracture pressure of geologic formations.

- Additional casing costs associated with deeper surface or intermediate casing needed to cover and cement over usable water zones that are currently allowed to be isolated behind pipe.

- In some cases, an additional intermediate casing string may be needed where none is currently required. This might be the case where surface casing cannot be extended deep enough to cover all usable water zones due to fluid circulation and geologic constraints. Running an additional casing string would mean additional rig, cementing, and pipe costs. It would also mean that earlier drill bits and casing strings would need to be a larger diameter (and therefore more expensive).

- Multi-stage cementing for wells where covering all usable water zones with a single-stage cement job would result in hydraulic pressures exceeding the fracture point of exposed formations. Multi-stage cementing is more technically complex and requires more time because earlier stages must initially set (so that they do not add to the hydraulic pressure) before later stages are run. The result is additional rig and equipment rental time.

Not all incremental costs would be incurred for all wells. Many wells might not have any incremental casing and cementing costs. Other wells may be subjected to very high additional

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[32] The webpage is available at:
http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Onshore_Operations/apdk.html.

[33] 77 Fed. Reg. 27,691, 27,696 (May 11, 2012) (emphasis added).

costs, particularly where fracture pressures limit the amount of cement that can be circulated. Under these circumstances, specialty cements, additional pipe, and multi-stage cementing would be significant costs, as would the additional rig and equipment time needed to implement these additional design factors.

As previously discussed, state oil and gas agencies and the BLM field offices inform our members how deep casing strings need to be set and cemented to comply with Onshore Order No. 2. Operators do not typically sample water zones to develop TDS concentration data. It is therefore not possible to determine the areas in which "usable water" zones are protected under Onshore Order No. 2 without cement behind the pipe.

Applying a conservative estimate, however, and assuming only 2,350 feet of additional pipe as representative of the costs associated with the proposed rule's "usable water" requirement (*i.e.*, as a direct measure of extended casing and additional casing strings and as a surrogate for specialty and other cement costs and increased rig and equipment time), John Dunham & Associates estimates that this measure would increase costs by an average of approximately $87,000 per well and a total of approximately $310 million per year. Even at only 1,000 feet of additional casing, the added costs would total approximately $132 million.

Costs Associated with Identifying Usable Water

As previously noted, BLM has incorrectly assumed that operators have "drill logs" that identify usable water zones. Based on this assumption, BLM's economic analysis does not include costs for the proposed requirement that operators submit in their Notices of Intent Sundry data locating the tops and bottoms of all occurrences of usable water. BLM should either revise the rule to exclude this requirement, or update its economic analysis to reflect the costs that this requirement will impose.

Our members indicate that the cost of obtaining accurate TDS data would be substantial, likely in the range of $100,000[34] to $150,000 to obtain data for a single well. The proposed rule allows the use of water data from "another well in the vicinity," so not all wells would require sampling. If sampling is required for each type well, the cost averaged over all wells would be approximately $8,000 to $12,000 per well. Based on 3,566 wells, the number of hydraulic fracturing operations that BLM estimates to occur in the first year the proposed rule is implemented,[35] this would be approximately $28.4 million to $42.5 million per year.

As previously discussed, we have proposed regulatory language revising the identification of usable water requirement in 43 C.F.R. § 3162.3-3(d)(2) to preserve the currently-used process, by which operators are informed which usable water zones must be protected. If BLM does not accept the proposed revision, we request the following change:

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[34] A study prepared at Oklahoma City University, included in comments Devon Energy Corporation submitted on June 24, 2013, indicates that water tests would cost approximately $101,200.

[35] U.S. Bureau of Land Mgmt., *Economic Analysis for Hydraulic Fracturing Rule* at 40; 78 Fed. Reg. 31,636, 31,666 (May 24, 2013).

Removal of Drill Log Data Requirement

Strike the following underscored language from proposed § 3162.3-3(d)(2):

The measured or estimated depths (both top and bottom) of all occurrences of usable water by use of a drill log from the subject well or another well in the vicinity and within the same field;

Complications and Costs for Existing Wells

The proposed rule states that all hydraulic fracturing and refracturing operations must meet the protection of usable water standards.[36] As previously discussed, BLM interprets the new provisions related to the protection of usable water as requiring that cement cover each usable water zone, but this is more stringent compared to the provisions related to the protection of usable water in Onshore Order No. 2.

The problem, then, is that the proposed rule will require existing wells to meet the expanded cementing requirements the rule imposes before these wells can be hydraulically fractured or refractured. Some existing wells already have cement across all usable water zones. Other wells do not have cement behind pipe across all of these water zones, instead protecting them by separation and segregation, consistent with Onshore Order No. 2. For these wells, we are concerned that BLM will require squeeze cementing or, where such operations are infeasible, will not allow fracturing or refracturing at all.

We request that BLM amend the proposed rule to require that existing wells continue to meet the protection of applicable groundwater standards in place when the well was first completed. This could be accomplished by inserting the words "for all new wells" into proposed 43 C.F.R. § 3162.5-2. Without this amendment, BLM will subject many wells (drilled in good-faith reliance on Onshore Order No. 2) to expensive workovers and even premature retirement.

We strongly oppose any rule provision that would needlessly strand significant amounts of reserves and capital resources. This is especially true when the proposed rule upsets justifiable expectations that drilling and cementing in accord with BLM's standards and orders will allow continued use for the reasonable life of an approved well. If BLM proceeds with this rule provision, the agency must capture these costs in its economic analysis. These costs would include workover expenses, loss of reserves associated with premature retirement of wells, and drilling expenses for replacement wells.

II. CEMENT EVALUATION LOGS AND CEMENT REPAIR PROVISIONS

The current version of the BLM's proposal replaces the term "cement bond log" ("CBL") with the more expansive "cement evaluation log." The revised rule also restricts the logging requirement for casing strings contacting "usable water" zones to "type wells," but retains provisions requiring repairs and confirmatory CELs where there is an indication of an inadequate cement job.

[36] 40 C.F.R. § 3162.3-3(b).

We support the substitution of the term CEL because it would afford our members greater flexibility. But we have significant concerns with the provisions dictating when a CEL would be required and how CELs and other data would be used in determining the adequacy of cement jobs. As currently written, the proposed rule encourages activities that will weaken wellbore integrity by requiring cement "repairs" where none are actually needed.

One concern is the requirement that CELs be run for surface casing and other casing strings where cement is circulated to surface. As discussed below, CELs are not a best practice for surface casing because traditional cementing measures, including verification of cement returns at the surface, render them unnecessary. If BLM requires CELs for surface casing and other strings where cement is circulated to surface, it will be imposing significant costs without actually improving the detection of inadequate cement jobs.

We acknowledge that the "type well" concept is an improvement compared to the initial proposal; but the revised provisions are nevertheless unnecessary and expensive. In fact, BLM's justification for limiting CELs to type wells is the inherent efficacy of the measures traditionally used to evaluate cement integrity and formation isolation for casing strings where cement is circulated to surface. Despite this, the BLM retains CELs for type wells without explaining how the required CELs will identify instances of inadequate cement that currently-used measures would not detect.

Another concern is that the cement repair requirements in the proposed rule would be triggered too easily (by any single "indication" of inadequate cement, without regard to other data) and would therefore result in "repairs" where other data, such as pressure tests, demonstrate that proper isolation was achieved. These provisions condition certification following repairs on CEL data, in effect making CEL data the sole determinant of well integrity.

CELs can be misleading when analyzed in the absence of operational cementing data and should not be used as the sole or even primary determinant of whether a cement job is adequate or inadequate. Ignoring pressure tests and other data based on a CEL would cause operators to conduct unnecessary remedial cement squeeze jobs. These jobs would be a needless expense and, worse, would weaken well integrity, increasing the likelihood of future operational issues.

There is No Basis for Requiring CELs When Cement Is Circulated to Surface

CELs are Not Needed Due to Traditional Integrity Verification Measures

Oil and gas operators typically confirm the adequacy of the cement for surface casing by employing most or all of the following measures: (i) using properly spaced centralizers; (ii) using excess cement; (iii) monitoring pressures and flow rates during cementing; (iv) circulating cement to surface; (v) verifying that there is no "fall back" of the cement once pumping stops; (vi) pressure testing the surface casing before drilling out the cement; and (vii) pressure testing the casing shoe after drill out. Indeed, BLM already requires the use of many of these procedures-- Onshore Order No. 2 requires centralization, the circulation of cement to the surface, and the use of top jobs or other remedial cementing measures to assure that cement returns to the surface.

In light of the cement integrity measures noted above, operators do not typically run a CEL for surface casing and might not run a CEL for the intermediate and production strings, particularly where subsequent strings are also cemented to surface. Many intermediate and most production casings strings are not circulated to surface, due to engineering constraints, such as the hydraulic pressure of the cement and the fracture pressure of the formations behind the pipe.

Where cement is not circulated to surface, operators often run CELs as a means of accurately determining the "top of cement." Although CELs provide some information regarding bond integrity, this information is secondary to confirming that the top of cement is where it is expected to be based on the cement job design calculations. Pressure tests coupled with confirming top of cement provide the best indication that cementing was properly executed and that the cement will isolate relevant subsurface formations. In comparison, CEL data can be difficult to interpret properly and often yields false positives (as discussed more fully in the section addressing Wellbore Integrity).

Where cement is circulated to surface and pressure tests are satisfactory, CELs for casing strings that contact "usable water" are unnecessary because CELs do not provide any additional assurance of protection. This is particularly true for casing strings set in vertical or mildly deviated wellbores. Setting casing in a vertical wellbore makes it relatively easy to centralize the casing and to rotate and reciprocate the casing to improve the displacement of drilling mud and the elimination of channels in the annulus.

BLM acknowledges in the preamble to the proposed rule that industry typically does not run CELs for surface casing because the operator can observe the cement in the annulus and use additional cement if needed.[37] We note that the same reasoning applies to subsequent casing strings for which cement is circulated to surface.

BLM also acknowledges that measures such as those noted above are adequate indicators of a proper cement job—sufficiently indicative for BLM to use these alternatives as the basis for BLM's proposal to largely limit CEL requirements to "type wells."[38] We believe that the "type well" concept is a step in the right direction, but only because it reduces the level of burden associated with an unnecessary requirement.

CELs Will Not Improve Integrity

An essential problem with the proposed CEL requirement is that BLM does not establish why this measure is needed given all the other measures that are currently used to confirm that the cement job proceeded as planned and will properly prevent the subsurface migration of fluids. BLM does not discuss or cite any studies or other technical arguments supporting the agency's belief that conducting CELs on surface casing and other casing strings cemented to surface will actually reduce risk by detecting inadequate cement jobs in instances where current measures do not.

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[37] 78 Fed. Reg. 31,636, 31,651 (May 24, 2013).

[38] 78 Fed. Reg. 31,636, 31,652 (May 24, 2013).

BLM stated in the preamble to the initial version of the proposed rule that a Shale Gas Subcommittee report recommended "that operators engaged in hydraulic fracturing prepare cement bond logs and undertake pressure testing to ensure the integrity of all casings."[39] This statement is different in the revised preamble. The revised statement makes no mention of bond logs: "The final report also recommended that operators engaging in hydraulic fracturing undertake pressure testing to ensure the integrity of all casings."[40] The change appears to have been made because BLM's original statement regarding the subcommittee report was incorrect.[41]

BLM likewise cites guidelines the American Petroleum Institute ("API") issued related to hydraulic fracturing operations, stating that the guidance "describes *some* circumstances where CBLs are used to verify adequate cementing."[42] The API guidelines do not mention cement logs in the section specifically devoted to surface casing and state in the section on intermediate casing only that, "[d]epending on the well design, it may be appropriate to run a CBL . . . ."[43] The guidelines do not support CELs for surface casing and indicate that CELs are not universally necessary for intermediate casing.

Relying on the work of George E. King, P.E., BLM estimates in the economic analysis document for the proposed rule that three percent of wells will have an indication of an inadequate cement job.[44] This estimate alone, however, does not constitute support for the proposed CEL requirement; BLM overlooks the critical question, omitting any discussion regarding how many inadequate cement jobs currently go undetected, but would be detected with a CEL. BLM does not discuss the extent to which CELs would reduce risk by improving the detection of inadequate cement jobs compared to the confirmation measures which currently comprise industry's best practices.

It also appears that the BLM was unaware of or discounted Mr. King's other work on cement logs.[45] A more comprehensive review of Mr. King's work reveals that: (i) cement logs will not

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[39] 77 Fed. Reg. 27,691, 27,693 (May 11, 2012).

[40] *Compare* 78 Fed. Reg. 31,636, 31,639 (May 24, 2013).

[41] The Shale Gas Subcommittee report recommended the adoption of "best practices" and then mentioned that pressure testing and cement bond logs should be used to confirm "formation" isolation. The recommendation did not mention surface casing and bond logs for surface casing as a best practice. Equally important, the report used the terms "water reservoirs" or "drinking water resources" for water zones and the word "formation" for the hydrocarbon producing zone. This usage demonstrates that the bond log recommendation in the report concerns the production casing covering the producing hydrocarbon formation and not the casing covering drinking water zones. The report is available at: www.shalegas.energy.gov.

[42] 78 Fed. Reg. 31,636, 31,639 (May 24, 2013) (emphasis added).

[43] The API Guideline document is available at: http://www.api.org/~/media/Files/Policy/Exploration/API_HF1.pdf.

[44] The estimate is located on page 37 of the economic analysis for the proposed rule. The associated footnote references an *EnergyWire* article that cited King's February 2012 paper for the Society of Petroleum Engineers. The original paper is available at: http://fracfocus.org/sites/default/files/publications/hydraulic_fracturing_101.pdf.

[45] Mr. King is an expert in petroleum engineering. His paper on cement bond logs is publically available at: http://gekengineering.com/Downloads/Free_Downloads/Cement_Bond_Log_(CBL)_Overview-DRAFT-2.docx.

predict or confirm pressure isolation; and (ii) the only cement test method that can confirm zone-to-zone isolation is a pressure test.[46]

BLM's benefits analysis for the proposed rule reinforces these conclusions. The agency simply asserts that "the regulations would most certainly reduce risk," even while acknowledging that it is difficult to quantify the level of risk reduction that would be attributable to the regulations as a whole.[47] Not only is it "difficult" to assess the benefits of the rule as a whole, it is also "difficult to attribute benefits to one single test (for instance the CEL) when that is only part of the overall evaluation of wellbore integrity."[48]

BLM has not established that existing practices are insufficient for casing strings cemented to surface and cannot estimate the benefits of requiring CELs for these casing strings. This is because there is no empirical support establishing that the CEL requirement, operating in conjunction with traditional casing cement design and evaluation techniques, will actually enhance well integrity.

BLM appears to believe that there are benefits associated with running CELs for surface casing and other casing strings contacting "usable water." But belief alone is not a legal basis for rulemaking. We urge BLM to remove the CEL requirement for surface casing strings and other strings where cement is circulated to surface and we propose the following revisions to the proposed rule:

To Remove the Requirement for Routine Use of CELs

Strike proposed § 3162.3-3(e)(2) & (3) [requiring cement evaluation logs even without indicators of an inadequate cement job], renumber current proposed paragraphs (4) & (5), and strike the following underscored language from proposed § 3162.3-3(d):

<u>If the type well has not been completed, the cement evaluation log described in paragraph (e)(2) of this section must be provided to BLM before drilling operations may begin on the other wells in the group</u>.

The Cement Repair Requirements Will Compromise Wellbore Integrity

The proposed rule would require that, for any well where there is *an indication* of an inadequate cement job, the operator must report the information to BLM within twenty-four hours and submit a written report within forty-eight hours. As examples of the types of indicators that might suggest an inadequate cement job, BLM references lost returns, cement channeling, gas

[46] These issues are further discussed in the Wellbore Integrity section.
[47] 78 Fed. Reg. 31,636, 31,663 (May 24, 2013).

[48] 78 Fed. Reg. 31,636, 31,664 (May 24, 2013).

cut mud, et al.[49] Before commencing hydraulic fracturing operations, the operator must run a CEL showing that the inadequate cement job has been corrected and must certify the same.[50]

We agree that a CEL may be useful where there are corroborating indications of an inadequate cement job.[51] We have significant concerns, however, that the repair requirements would be too easily triggered, place too much emphasis on CEL data, and would mandate repairs where none are actually needed. Specifically, the current proposal would require repairs based on any single indication of an inadequate cement job without adequately defining what this term means and without consideration of other indicators.

As detailed below, the following revisions are needed: (i) repair assessments and cement adequacy certifications should be based on all of the available data, including pressure test data and an assessment of whether inadequate cement is likely to result in the contamination of "usable water" by subsurface migration; (ii) the term "indication of inadequate cement" should be clarified so that minor issues do not trigger additional investigation or repairs; (iii) clarification that the rule requires only that protected formations be "isolated" from the fractured zone, not that the cement actually cover and be bonded to the formation to be protected; (iv) adoption of objective indicators of cement isolation; and (v) recognition that there can be less costly and more effective alternatives to remedial cementing if a cementing job appears to have been inadequate.

Repair Decisions Should Not Be Based on a Single Indication of Inadequate Cement

BLM's proposed rule presumes that there is an inadequate cement job and mandates repairs based on a single data point. First, the rule states that "*an* indication" of an inadequate cement job triggers the cement repair requirements. Second, the subsequent requirement is that the operator must run a CEL "*showing that the inadequate cement job has been corrected.*"

The rule equates an "indication" of an inadequate cement job with proof of an inadequate cement job. And this indication triggers a required certification conditioned on having corrected the inadequate cement. As drafted presently, the certification process does not contemplate the possibility that the original cement job was adequate—there is no allowance for operators to simply demonstrate with other information that the "indication" was incorrect and that repairs are not needed.

The examples of "indicators" that BLM itself provides is illustrative. Observations of lost returns, cement channeling, and gas cut mud do not represent certain or immediate evidence of a poor cement job. Channeling can only be determined through an engineering analysis of the bond log in conjunction with the cementing operations data. Lost returns may occur, but are then regained and the cement tops are subsequently determined to be fine; and this can represent losses in zones above the planned top of cement placement. It is normal for gas cut mud to occur during the shutdown period after circulation and after the rigging up of cementing equipment is

[49] 78 Fed. Reg. 31,636, 31,652 (May 24, 2013).
[50] 78 Fed. Reg. 31,636, 31,676 (May 24, 2013).

[51] Due to the possibility of false positives, we believe that CEL data should not be used as an indication of inadequate cement *unless* there are other corroborating indicators.

finished. It is the engineering and operational analysis of the entire casing and cementing procedure -- and not any individual factor -- that allows operators to draw meaningful conclusions about the well's integrity.

By basing repair requirements on a single indication of inadequate cement, without regard to other information, the proposed rule will require repairs in circumstances where other data indicate that repairs are not necessary. We therefore request that BLM amend the rule to allow for repair assessments and cement adequacy certifications based on all of the available data, including pressure test data and an assessment of whether inadequate cement is likely to result in the contamination of "usable water" by subsurface migration.

We emphasize that an opportunity to request case-by-case variances, in lieu of objective standards, would be insufficient. Such a requirement would force operators to suspend operations and then wait on formal BLM approval before proceeding with drilling. It is very likely that in many cases the "indication" at issue would be minor and, even though it would be apparent that the issue would not impair wellbore integrity and formation isolation, operators would nevertheless incur delays. These delays will impose costs associated with rig and equipment fees—costs that are not presently included in BLM's economic analysis of the rule.

What is an Indication of Inadequate Cement?—Clarification is Needed

Critical to the application of the proposed rule is the fact that the rule does not define what an "indication of an inadequate cement job" means. The proposed rule provides examples, such as "cement channeling," but does so in an overly general terms that do not provide any meaningful guidance to operators. The proposed rule does not identify what level of gas in mud returns or degree of cement channeling qualifies as an "indicator" and/or renders a cement job "inadequate"? Or whether repairs are required for any length of cement channeling? If a CEL indicates 50 feet of cement channeling in the middle of a 200-foot column of cement, is this an "indicator" that renders the cement job inadequate (despite decades of petroleum engineering experience that the 50 feet of channels will not provide a pathway for fluid to migrate out of the zone)?

BLM's approach overlooks the fact that it only takes one good section of cement for there to be effective isolation. There can be channels for long distances without any detrimental consequences because channels must be continuous to establish a path for fluid migration. Mr. King, the analyst on whom BLM relies, estimates that the amount of channel-free cement required for pressure and fluid isolation is typically less than about fifty feet.[52] Not all channels a CEL might indicate need to be corrected. Equally important, attempts at correcting these channels can reduce integrity by allowing a path for fluids to move from the wellbore into the formation through perforations created to repair the "defect."

Yet as currently written, the rule appears to require cement repairs based on any indication of inadequate cement, no matter how minor and irrespective of whether other data indicate adequate cement. The proposed rule does not account for whether the indicated inadequacy (if real) would actually threaten formation isolation. This means that operators will be required to undertake

[52] *See* King footnote 44 *supra* at 2.

repairs in circumstances where factors beyond a CEL demonstrate that cement is adequate and formation isolation is effective, resulting in unnecessary expense and decreased wellbore integrity.

Except for a "top job," conducting cement repairs involves a "squeeze job." This involves perforating the casing string by detonating explosive charges to puncture the metal, providing pathways through which cement can be pumped into the annulus between the casing and the wellbore. Any damage to the casing decreases its structural integrity and increases the likelihood of future operational issues.

On the rare occasion where there is a continuous channel behind the casing, one which would allow the migration of fluids, perforating the casing and conducting a squeeze job may be prudent—otherwise, doing so is best avoided. In the interest of avoiding unnecessary repairs and preserving wellbore integrity, BLM should clarify the extent to which an "indication" is minor and does not trigger additional investigation and repairs.

CEL Data Should Not Be a Sole or Primary Indicator of Cement Adequacy

The proposed rule's overemphasis on CEL data, even making CELs the only method for confirming isolation and adequate cement, represents a fundamental problem. As previously discussed, any single indication of an inadequate cement job triggers an obligation for operators to run a CEL to demonstrate that the inadequacy was corrected. Even if all other indicators show adequate cement and formation isolation, the rule will require "corrections" and will require a CEL. Worse, as the rule is currently worded, the CEL is the only basis on which an operator can confirm and certify that the cement is adequate.

We do not understand BLM's emphasis on CEL data. CELs are difficult to evaluate absent other cementing measurements and, even when evaluated properly, pose a significant risk of false positive indications of inadequate cement integrity. Each kind of sonic and ultrasonic log used for cement evaluation has limitations, produces results that are open to a range of professional interpretation, and evaluated in isolation poses a significant risk of false positives. These risks are elevated for surface casing because the cement used for surface casing is lighter and has a lower compressive strength, making the acoustic signature more difficult to distinguish from drilling mud.

Cement evaluation logs can provide a risky basis for evaluating the integrity of the cement. The logs do not "see" the cement. The logs merely allow a competent professional to draw inferences about the evenness of the cementing around the pipe, based on readings of sonic or ultrasonic waves passing through the pipe into the cement and the rock beyond. For this reason, API Technical Report 10TR1 cautions that cement bond log interpretation "is *not recommended* as a best practice for cement evaluation."[53] While the amplitude or attenuation of the sound returning to the log's receivers is "often used as a 'bonding indicator' to infer that the cement is 'poorly bonded' or 'well bonded' to the casing[, t]hese 'bonding indices' . . . can be totally misleading."[54]

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[53] API Technical Report 10TR1 at 13 (Sept. 2008).
[54] *Id.* at 14.

Imperfections in the running of the log itself can give misleading indications about the quality of the cement. For example, "[w]hen the [logging] tool is eccentered [off-center] in the casing, the bond log quality is highly questionable."[55] Using evaluation logs on surface casing is especially troublesome. To control quality in evaluation logging, the best practice is to begin by comparing the results recorded from logging a section of casing that is cemented with logging results from a section of uncemented casing, so-called "free pipe."[56] But BLM requires surface casing to be cemented all the way back up to the surface, meaning that there is no free pipe to be logged for comparison.

In an age when computer modeling is relied upon so heavily, there is of course a temptation to look to computer programs that convert cement evaluation log readings into a "cement map." There is risk here as well. "One common problem with cement maps is the use of varying colors to distinguish 'good cement' from 'poor cement.' These colors are based only on a log response and do not reflect the ability of any cement to provide isolation in the well. This problem has led many engineers to misinterpret logs and attempt cement squeezes when they are not necessary."[57] And what is the method for assessing unusual results in cement mapping or in evaluation logs? It is to use the customary data gathered or observed in the cement operation itself. "If the cement job was properly performed, the well had full circulation, the cement was mixed to the proper density and all data from location matches the plan, there is little evidence to believe a cement evaluation log that shows no cement behind pipe."[58]

If BLM must choose a single basis for making a cement certification, it should choose pressure testing. But the better, safer course is to allow certification based on operator assessments of all available information. Unless BLM resolves the issues discussed above, our members will be needlessly required to perform expensive remedial cement squeeze jobs to eliminate channels which may not actually exist. These "repairs" will weaken the structural integrity of well casing strings without improving formation isolation.

One means of resolving some of these issues is for BLM to clarify that the rule requires only that protected formations be "isolated" from the fractured zone, not that the cement actually cover and be bonded to the formation to be protected. This is a reasonable approach that other jurisdictions have adopted. A Louisiana Department of Natural Resources ("LDNR") guideline document for SDWA injection wells, for example, establishes numerical benchmarks for using cement logs to establish cement "isolation."[59] The guidelines require at least a continuous sixty percent cement bond over a minimum interval of cement, with the interval based on the size of the casing.

If BLM continues to insist on CEL data as the sole basis of evaluating repairs following an indication of inadequate cement, establishing criteria like the LDNR benchmarks would give operators an objective standard upon which to base their certifications. Without an objective

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[55] *Id.* at 17.
[56] *Id.* at 23, 36, 57, and 73.
[57] *Id.* at 75.
[58] *Id.* at 77.
[59] The LDNR guidelines are available at:
http://dnr.louisiana.gov/assets/OC/im_div/CBL_Guidelines_and_Interpretation_Guide.pdf.

standard, operators will be forced to choose between making "repairs" that they believe unnecessary (and detrimental to well integrity) and possible noncompliance with the rule.

If Retained In the Rule, Type Well Applicability Should Be Expanded and Clarified

BLM is proposing to limit the CEL requirement for casing strings that contact a usable water zone to "type wells" and wells where there is an indication of inadequate cementing. "*Type well* means an oil and gas well that can be used as a model for well completion in a field where geologic characteristics are substantially similar within the same field, and where operations such as drilling, cementing, and hydraulic fracturing are likely to be successfully replicated using the same design."[60]

The type well provision states that CELs for subsequent wells are not required if: (i) the CEL for the type well shows successful cement bonding to protect against downhole fluid cross-migration into water zones; (ii) the subsequent well has the same specifications and geologic characteristics as the type well; (iii) the subsequent well *was approved in the same group sundry notice as the type well*; and (iv) cementing operations monitoring data parallels the type well monitoring data.[61]

To the extent BLM does not simply remove CEL requirements for casing strings where cement is circulated to surface, we generally approve of the type well concept. We nevertheless urge BLM to remove the requirement that subsequent wells undergo a CEL if approved in a different group sundry notice from the type well. There is no technical basis for this limitation—if the other conditions are met, such as similar geologic conditions, the timing of approval should not matter. Operators should be permitted to demonstrate in a subsequent group sundry notice that the existing type well would also be representative of the wells to be approved in the subsequent notice.

BLM should better explain and clarify the type well concept. The preamble to the proposed rule indicates that there might be one type well per field, per operator.[62] The rule should define the term "field" because some oil and gas agencies define a field to mean a single reservoir and others define it to mean a broader geographical area overlaying multiple reservoirs.

Based on definitions applicable in North Dakota, we suggest that BLM define a "field" as "the general area underlain by one or more pools," and to define "pool" as "an underground reservoir containing a common accumulation of oil or gas or both; each zone of a structure which completely separated from any other zone in the same structure is a pool."

Clarification is also needed regarding the amount of variability allowed between a type well and subsequent wells and between the cement operations monitoring data for the type well and a subsequent well. Water formations and hydrocarbon formations are not perfectly horizontal and will vary somewhat in depth and thickness from well to well within a field. As a result, casing

[60] 78 Fed. Reg. 31,636, 31,674 (May 24, 2013).

[61] 78 Fed. Reg. 31,636, 31,676 (May 24, 2013).

[62] 78 Fed. Reg. 31,636, 31,664 (May 24, 2013).

depths may also vary somewhat, as would the cement volumes needed for the casing. Cement operations monitoring data will also vary slightly from one well to another.

BLM should clarify that the type well provisions contemplate a degree of variability between the design and monitoring data for type wells and subsequent wells, provided the variation would not be expected to compromise formation isolation. These determinations would be made based on industry norms, local conditions and circumstances, and operational experience.

Type Well Revisions

If CELs are required, strike proposed § 3160.0-5 *Type well* [definition] and replace with:

Type well, when used in section 3162.3-3(e), means an oil and gas well that can be used as a model for cementing operations in an area in which cementing of casing is likely to be successfully replicated using the same design. *Type well*, when used elsewhere in section 3162.3-3, means an oil and gas well that can be used as a model for well completion in a geographic area or field where geologic characteristics are substantially similar, and where operations such as drilling, cementing, and hydraulic fracturing are likely to be successfully replicated using the same design.

Strike proposed § 3162.3-3(e)(3) and replace with the following:

An operator is not required to run a cement evaluation log on the casings of a subsequent well where an operator submitted a cement evaluation log for a type well that shows successful cement bonding to protect against downhole fluid cross-migration into water zones.

Cement Monitoring and CEL Requirements Should Not Apply to Existing Wells

The proposed rule requires operators to submit cement operations monitoring reports and, for type wells, CELs within thirty days after concluding "hydraulic fracturing operations." The provisions in question do not mention refracturing and it is our understanding that these requirements would not apply to refracturing.[63]

The exemption for refracturing operations, however, is not broad enough to prevent many existing wells from becoming subject to the cement monitoring and CEL requirements. This is because the term "refracturing" applies only to wells that have previously undergone a hydraulic fracturing operation.[64] Existing producing wells that have not previously been fractured and are fractured in the future would be treated as if they are a new well. As a result, operators may be expected to submit cement operations monitoring reports and CELs for these existing wells, if and when those wells are hydraulically fractured in the future.

[63] 43 C.F.R. § 3162.3-3(e) (proposed).

[64] 43 C.F.R. § 3160.0-5 (proposed).

Because the rule was only proposed in mid-2012, and because CELs are not needed for surface casing (and no state requires them), existing wells will not be able to meet the cement monitoring and CEL requirements. This may result in BLM denying approval of proposed hydraulic fracturing operations and the premature abandonment of thousands of wells. In some cases, operators would elect to re-drill the well (at significant cost). In other circumstances, however, the original well was viable only because it intersected multiple reservoirs and could be plugged back from reservoir to reservoir over the life of the well. For many of these wells, re-drilling after early abandonment would not occur, because the reserves recoverable from the remaining reservoirs would not justify the expense of a new well.

The lack of an exemption for existing wells will result in enormous costs which BLM has not assessed. Every premature abandonment will result in a loss of capital assets. Where wells are not re-drilled, operators will lose recoverable reserves and mineral owners will lose royalties. Each and every re-drilled well will cost millions of dollars. We assert that allowing the loss of reserves under these circumstances would be a violation of the agency's legal obligation to manage federal lands and the public's natural resources prudently.

We believe the proposed CEL requirements to be unnecessary for new wells. To allow this requirement to be retroactively applied to existing wells exacerbates the error this requirement poses. As proposed, the rule will improperly preclude operators from realizing the benefit of their interests in the mineral estate without any commensurate public benefit. In the event BLM retains a type well CEL requirement, we urge BLM to adopt the following regulatory revisions:

Hydraulic Fracturing of New Wells

Proposed Change to BLM proposed 43 C.F.R. § 3160.0-5

New well means an oil and gas well for which surface casing was set and cemented on or after [Insert Date 60 Days After Publication in the Federal Register].

Proposed Change to BLM proposed 43 C.F.R. § 3162.3-3(e):

(e) *Monitoring of Cementing Operations and Cement Evaluation Log Before Hydraulically Fracturing a New Well.*

(1) During cementing operations for a new well, the operator must monitor and record the flow rate, density, and treating pressure and submit a cement operation monitoring report to the authorized officer within 60 days after flowback associated with a hydraulic fracturing operation begins. This requirement does not apply to a refracturing operation.

(2) For each new well, the operator must run a cement evaluation log or logs on each casing that protects usable water and the operator must submit those logs to the authorized officer within 60 days after flowback associated with a hydraulic fracturing operation begins, except as provided under (e)(3) of this section. This requirement does not apply to surface casing or to a refracturing

operation. A cement evaluation log is any one of a class of tools that provide an indication of the integrity of annular cement bonding, such as, but not limited to, a cement bond log, ultrasonic imager, variable density logs, microseismograms, cement bond logs with directional receiver array, ultrasonic pulse echo technique, or isolation scanner. An operator may select the tool used to prepare the CEL, as long as it is at least as effective in verifying the integrity of annular cement bonding as is a cement bond log.

Costs Associated with the CEL Provisions

BLM's revised proposal acknowledges that the CEL provisions would impose significant costs on operators, primarily attributable to the additional "waiting-on-cement" time associated with running CELs for surface casing. As discussed below, BLM is significantly underestimating the cost of the CEL provisions.

CEL costs are the largest category in BLM's estimates, comprising about eighty-three percent to eighty-nine percent of the total costs the agency estimates. Most of the cost is associated with CELs for surface casing strings (between about sixty-three percent and seventy-seven percent of total rule costs). Two other categories contribute to the CEL costs: CELs for intermediate casing (between about eight percent and thirteen percent of total rule costs) and CELs following inadequate cementing (between about four percent and six percent of total rule costs).[65]

BLM's cost estimates for CELs depend on many factors. Two of the most significant are: (i) the percentage of wells drilled that are "type wells" for which CELs would be required; and (ii) the amount of additional rig and equipment "idle time" associated with waiting on cement to cure before running CELs.

Type Well Estimate Depends on Removal of the "Same Group Sundry Notice" Limitation

BLM estimates that approximately eight percent of wells will be type wells. Our members are unable to comment effectively on this assumption because BLM has not clearly stated how the concept will be applied in practice. No two wells will be exactly identical, nor will any two sets of cement operations monitoring data.

Given the lack of detail BLM has provided, our comments on this issue are largely confined to requesting that BLM provide an expansive interpretation of the conditions under which a type well will be considered representative of subsequent wells. We expect, however, that any additional commentary from BLM will be consistent with BLM's representation that the agency "is confident that the average number of wells that an operator completes in a field is a good measure . . . ."[66]

We also note that BLM's eight percent estimate is questionable if: (i) a "field" is a single reservoir and not a geographic area overlaying multiple reservoirs; and (ii) BLM limits type well applicability to wells included in the same group sundry notice. In the economic analysis for the

[65] 78 Fed. Reg. 31,636, 31,666 (May 24, 2013).

[66] 78 Fed. Reg. 31,636, 31,664 (May 24, 2013).

proposed rule, BLM states that the number of CELs on surface casing was estimated based on data indicating that each operator completes an average of 12.572 wells in a field (one type well per 12.572 wells is approximately eight percent).

Assuming a field is a geographic area, each operator is likely to submit *at least* two sundry notices in a field, one for an initial exploratory well or small group of such wells and one for a larger development plan submitted after the viability of the operator's leases in the field has been validated. If type wells are limited to the wells included in a single group sundry notice, BLM's eight percent estimate is incorrect. BLM should therefore remove the single group sundry notice limitation for type wells. If the agency does not, it should update its economic analysis to reflect that type wells comprise at least sixteen percent of wells.

BLM Underestimates Rig and Equipment Idle Time

BLM has underestimated the impact of the CEL requirements on rig and equipment idle time. The agency assumed the following:

- For the low-cost case, operators would avoid the costs of idle drilling equipment for 56.47 percent of type wells—the percentage of wells for which it estimates surface casing would be set by a small rig.[67] The CEL requirement would cause an additional 24-hour delay for surface casing on the remaining type wells.

- For the high-cost case, the CEL requirement would cause an additional 24-hour delay for surface casing on all type wells.

- For both cases, the rule would compel CELs for intermediate casing on approximately five percent of type wells, with each CEL for intermediate casing resulting in 48 hours of additional delay.

- Rig and equipment idle costs of $1,900 per hour ($45,600 per day).

BLM should use a 72-hour delay for CELs on both surface and intermediate casing strings, consistent with EPA guidelines for running cement logs for UIC wells.[68] Those guidelines recommend waiting seventy-two hours because cement logs are more likely to show poor bonding if run before the cement achieves maximum compressive strength.

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[67] BLM opined that this number might decline in the future as operators seek to avoid idle time by using surface casing rigs on more wells. We do not believe that this is the case. The primary reason to use a smaller rig for surface casing would be because doing so results in lower costs. Yet the fact remains that not all wells are drilled this way; the development cycle and project-specific logistical and operational concerns often result in operators choosing other drilling methods. These same concerns will continue to limit the number of wells that will be drilled using surface casing rigs in the future.

Using multiple rigs can have cost advantages for multi-well projects. For single well development projects, however, the cost of using multiple rigs is comparable to the cost of using a single rig, because of the mobilization and demobilization costs associated with multiple rig operations. Because using multiple rigs does not present any meaningful cost savings to small projects, availability and logistical issues will likely result in small projects continuing to use a single drilling rig.

[68] EPA's guidance is available at: http://www.epa.gov/region8/water/uic/R8UIC-GUIDE34.pdf.

Although it is often possible to run a cement log sooner than seventy-two hours, our members indicate that the repair provisions in the proposed rule will likely compel operators to delay CELs until maximum compressive strength is achieved. This is because the proposed repair provisions can be triggered based on CEL data alone and will not allow operators to interpret the CEL data in conjunction with other data when determining whether cement repairs are needed.

Operators have historically been able to use their operational experience and other data to determine whether indications of channels in a CEL warrant remedial cementing. The proposed rule, in contrast, requires remedial action based on any indication of inadequate cement and without regard to other available evidence. With CEL data (and that data alone) determining whether a cement repair job is needed, operators are likely to wait on maximum compressive strength before logging. This will not remove the possibility of false positives, but could still mean the difference between having or not having to conduct a repair that CEL data indicates might be needed, but other data indicates is unnecessary.

The delay associated with surface casing cement should be *at least* as long as the forty-eight hours BLM assumes for intermediate casing.[69] First, the closer to the surface, the lower the downhole temperature, resulting in longer cure times. Second, the cement used for surface casing tends to be lighter than the cement used for intermediate and production casing due to concerns that the hydraulic pressure of the cement column will fracture a geologic formation and result in loss of circulation and an inadequate cement job. A lighter cement means more time is needed before the compressive strength of the cement is sufficient for the cement's acoustic properties to be distinguishable from the acoustics of liquids, such as drilling mud.

We also note that average rig and equipment rental costs should be higher than $1,900 per hour ($45,600 per day). One of our members reports estimated delay costs of approximately $2,292 per hour ($55,000 per day). Others report delay costs as high as approximately $2,917 per hour ($70,000 per day). Applying BLM's underestimate of surface casing delay time -- only 24 hours -- an economic analysis John Dunham & Associates prepared (included as Appendix A to these comments) estimates that the CEL provisions will still result in approximately $7.6 million of additional costs. Because actual delay times and costs will be much higher, this figure represents a very conservative estimate of the delay costs the propose rule will impose.

The Cement Repair Provisions Will Result in Additional Costs

The expanded repair requirements in the proposed rule will also result in additional costs. We maintain that an indication of inadequate cement should be treated as just that—an indication that merits closer attention. The proposed rule, however, treats an "indication" as a trigger for remedial action. By doing so, it will result in operators undertaking unneeded remedial actions, resulting in rig costs, service company costs, negative impacts to wellbore integrity, and possible future workovers to remedy operational problems associated with decreased casing integrity.

BLM has largely failed to account for the costs of these additional remedial activities. The agency's economic analysis is limited to an estimated $7,000 associated with running a CEL when there is an indication of inadequate cementing. The analysis does not include additional

[69] Section 3.2 of API Technical Report 10TR1 on Compressive Strength also recommends at least forty-eight hours.

rig and equipment time on grounds that "operators must current [sic] remediate to satisfaction." BLM's position appears to be that the rule only requires operators to fix problems and, because Onshore Order No. 2 already requires that operators fix problems, the additional rig time and other remediation costs do not represent new expenses.

The problem is that the proposed rule significantly expands the circumstances in which operators must take corrective actions and BLM has failed to consider the costs of this expansion. As previously discussed, the proposed rule would require remedial actions based on any single "indication" of an inadequate cement job, which is a major change from the remedial requirements in Onshore Order No. 2.

Onshore Order No. 2 provides that remedial action can be required if the surface casing is not cemented to surface, a casing string fails pressure testing, or specified equipment such as centralizers, top plugs, and bottom plugs, are not properly used. Onshore Order No. 2 does not, however, impose remedial actions based on *any* "indication" of an inadequate cement job, such as gas-cut mud or discontinuous cement channels. The proposed rule's repair requirements are too easily triggered and the proposed rule would mandate repairs based on information that would not trigger repairs under Onshore Order No. 2. Perhaps more important, there is a significant risk that the proposed rule will trigger repairs were none are needed, potentially compromising wellbore integrity. BLM must include these expanded costs in its economic analysis and must account for these risks in its rationale in support of the proposed rule.

Operators Cannot Reduce Idle Times By Drilling the Intermediate Hole and Then Logging

In the preamble to the proposed rule and associated economic analysis, BLM states that operators can eliminate additional idle time by not waiting on the cement to achieve the compressive strength needed to run a CEL and instead proceeding to drill the intermediate hole. The surface casing could then be logged at any convenient time before setting intermediate casing. Although this idea was not incorporated into the agency's economic analysis, it reflects a misunderstanding of drilling operations, and therefore deserves comment.

CELs must be run under pressure, generally from approximately 1,000 to 2,000 psi. Because open wellbores cannot function as "pressure vessels," applying pressure in an open hole will simply push fluids into the open formations. Pressures would increase if the operator pumps hard enough, but maintaining a consistently even pressure would be impossible. Failure to maintain an even pressure would impact the acoustic properties in the wellbore making assessment of the log results more difficult.

Although drilling mud is designed to form a filter cake that minimizes fluid movement into and out of open zones, there is some movement of fluid into open wellbores. Gas bubbles can form and then expand as they ascend the mud column and are subjected to decreasing hydraulic pressure. Noise from events such as this will detrimentally impact CEL results, meaning that a CEL run on casing with an open hole below could be useless.

III. RECOVERED FLUIDS MANAGEMENT

National data on "flowback" water from fracturing operations is difficult to assemble. Water injected during hydraulic fracturing does not all return to the surface in short order, but can

return over a span of months or years. At some point, flowback becomes hard to distinguish from "produced water," the briny water that has been within the oil and gas bearing formation for millenia. As discussed elsewhere in these comments, there is no meaningful difference in protecting federal and Indian lands from discharges of "flowback" as compared to "produced water" and little, if any, meaningful basis on which to distinguish the two. Under various nomenclature, fluids recovered from oil and gas operations have been the subject of regulation for decades and these regulations are instructive in assessing BLM's proposed rule. BLM should assess this waste stream as "recovered water" rather than search for some arbitrary distinction between "flowback" and "produced water."

In 2009, the Environmental Science Division of Argonne National Laboratory prepared a report, "Produced Water Volumes and Management Practices in the United States" (ANL/EVS/R-09/1 Sept. 2009). Assessing data for calendar year 2007, Argonne estimated that oil and gas operations in the United States produced almost twenty-one billion barrels of water. Although methods of managing the water included evaporation ponds, surface release, offsite commercial disposal or treatment, and beneficial reuse (in addition to reuse in enhanced oil recovery), "[m]ore than 98% of produced water from onshore wells is injected underground. Approximately 59% is injected into producing formations to maintain formation pressure and increase the output of production wells. Another 40% of produced water from onshore wells is injected into nonproducing formations for disposal."[70]

Regulation of water and fluids recovered from oil and gas operations is extensive. Long term underground storage of these fluids is regulated under EPA's UIC program.[71] Use of recovered water for enhanced oil recovery is also subject to UIC constraint[72] and to the control of state oil and gas commissions. Surface discharge of returned water and fluids into waters is regulated under the Clean Water Act's National Pollutant Discharge Elimination System ("NPDES")[73] and state clean water laws. EPA's Effluent Limitations Guidelines for oil and gas extraction regulate discharge of recovered water throughout the country.[74] EPA and states have ample authority to regulate the pretreatment of recovered water sent to "publicly owned [water] treatment works"[75] at "centralized waste treatment facilities."[76] In short, where returned water is not reused, the process of disposal is extensively regulated, and a further role for BLM is unnecessary.

Where recovered water can be reused, the government's role should be to encourage that reuse. Although data on volumes is not readily accessible, reuse of recovered water in fracturing operations is on the rise. In its research in preparation for its 2014 study on hydraulic fracturing, EPA recognized a range of reuse technologies: "direct reuse, onsite treatment (e.g., bag filtration,

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[70] Argonne Nat'l Lab., Envtl. Science Div., *Produced Water Volumes & Mgmt. Practices in the U.S.* at 8, ANL/EVS/R-09/1 (Sept. 2009).

[71] 40 C.F.R. Parts 144-149 (2012).

[72] 40 C.F.R. §§ 144.22 & 144.28 (2012).

[73] 33 U.S.C. § 1311(a).

[74] 40 C.F.R. Part 435.

[75] 33 U.S.C. § 1317(b)(1).

[76] 40 C.F.R. Part 437.

weir/settling tanks, third-party mobile treatment systems) and offsite treatment. Offsite treatment, in most instances, consisted of some form of stabilization, primary clarification, precipitation process, and secondary clarification and/or filtration."[77]

The more recent report of the Texas Railroad Commission's Eagle Ford Shale Task Force has quantified the benefits of industry's focus on using less freshwater in fracturing operations in one of America's most prolific shale plays. In a presentation to the Task Force, Dr. Darrell Brownlow reported that while a typical Eagle Ford well required the use of 15 acre-feet of freshwater, "many operators have reported decreasing water consumption to an average of 10-acre-feet . . . of water per well."[78] Some of this reduction is from reliance on gel-based fractures rather than "slickwater" fractures, but some is attributable to reuse of water. The Railroad Commission is also amending its rules on water recycling to facilitate recycling. As of the date of the report, the Railroad Commission has issued permits to fourteen mobile recycling facilities and one stationary facility.[79]

Against this backdrop of regulation and rapid technological innovation, we turn to BLM's proposed regime for recovered water. Under Onshore Order No. 7, BLM currently permits four principal options for disposal. Two options overlap and are redundant of EPA's NPDES and UIC programs. The other two options are the use of lined and unlined pits. Onshore Order No. 7 also allows an operator to propose some fifth alternative to these four. In the proposed rule, BLM would eliminate the options of the fifth alternative and of unlined pits. Under proposed Section 3162.3-3(h), "Storage of all recovered fluids must be in either tanks or lined pits."

Our comments below provide more detailed concerns over this proposed requirement, but, viewed broadly, our great concern is over BLM's movement away from operational flexibility toward rigidity in handling recovered fluids. BLM anticipates the drilling of over 4,000 wells a year to be subject to the new rule. Technology advances far more rapidly than federal regulations change. It is already easy to envision a situation in which an operator uses a mobile treatment facility onsite to condition the water for reuse in the next fracturing operation, with a temporary pit employed for management of the fluid. We urge BLM to maintain a flexible approach to storage of recovered fluids.

The proposed rule would require that recovered liquids be managed in either a lined pit or tanks. BLM has requested feedback regarding whether the rule should require that all recovered fluids be managed in tanks, or that pits should be double-lined and/or equipped with a leak detection system.

We support the current version of the proposed requirements, primarily because the current version of the rule provides operational flexibility regarding whether to use a lined pit or aboveground tanks. Some operators prefer pits and others prefer tanks. Often that preference varies on a project-by-project basis, depending on a wide variety of economic, geographic,

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[77] U.S. EPA, "Study of the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources: Progress Report" at 104, EPA 601/R-12/011 (Dec. 2012), available at: www.epa.gov/hfstudy.

[78] Texas RR Comm'n, "Eagle Ford Shale Task Force Report" at 47-48 (March 2013).

[79] *Id.* at 51.

logistical, and environmental factors. Tanks prevent rainwater accumulation from increasing fluid management volumes and can generally be re-used, but also involve large upfront costs and pose a target for lightning strikes. Both storage methods will disturb surface land; but tanks will often impose a larger overall footprint for the same volume of storage.

Tanks do not necessarily reduce the potential for leaks because manifolding tanks together involves more piping than is required to transfer fluids to and from a pit. The increased amount of piping connections poses a release threat, even with the implementation of best management practices to ensure the integrity of transfer lines. Setting, emptying, and removing tanks will also result in increased truck traffic compared to pits. As John Dunham & Associates discusses, the average expected cost for renting storage tanks would be about $11,500 per well (compared to BLM's estimate of $6,000 per lined pit), which totals approximately $19.6 million per year. Based on these numbers, tanks would cost approximately $9.4 million more than the use of lined pits.

Some of our members report even higher costs, in particular where operators are engaged in fluid recovery and reuse operations and must manage a very large volume of water for an extended period of time. In this circumstance, it is relatively common to use a large, central, double-lined pit (with leak detection) designed for long-term use of at least three years. This type of pit would cost approximately $550,000. In comparison, rental charges for an equivalent volume of tank storage would run approximately $36 million over the same three-year period.

One potential advantage of a pit is where the recovered fluid will be used for more than one well. Tanks used for the management of returned fluids typically cannot store the entire volume of fluids returned from the well. A tank's contents must be transferred for disposal throughout the recovery period, thereby making space for operations to continue. In comparison, a pit can generally be sized to handle the entire volume of recovered fluids, which facilitates reuse and decreases impacts on fresh water resources.

Finally, neither double-lined designs nor leak detection systems are needed for short-term, temporary pits. Releases from a liner are typically slow and low in volume, only resulting in significant impacts over the course of years. For some wells, pits may be required only for temporary service, from a few weeks to a few months at the commencement of operations, and not for a period of years. In the very rare event that a leak occurs, it would be discovered upon closure of the temporary pit, at which time the minor impacts associated with the leak can be remediated with relative ease.

IV. PRE-FRACTURING INFORMATION ISSUES

Fracture Modeling

The proposed rule requires operators to obtain an approved Notice of Intent Sundry before conducting a hydraulic fracturing or refracturing operation. The Notice of Intent Sundry must include the estimated or calculated fracture direction, length, and height. Our members are concerned that, to satisfy this information requirement, BLM will expect operators to undertake expensive fracture modeling exercises before fracturing each well.

Operators typically conduct extensive fracture modeling and mapping exercises only when first developing a field. Because these models are expensive and time-consuming, operators will typically use the fracture modeling data gathered for the first several wells in a field to estimate the results of hydraulic fracturing operations for subsequent wells.

A study Oklahoma City University conducted (included in preliminary comments Devon Energy Corporation submitted on June 24, 2013), indicates that simple fracture modeling costs approximately $4,500, which would result in costs of approximately $15.45 million per year if required for every well. Our members inform us that more sophisticated modeling can cost as much as $200,000.

Operators do, of course, calculate the estimated fracture geometry of their wells before conducting hydraulic fracturing operations—what they do not do is engage in extensive modeling for each well, because the similarity of results quickly renders this type of modeling unnecessary. In light of the preceding, we request that the BLM clarify that operators are only required to provide the fracture geometry information that they produce as part of their normal planning for hydraulic fracturing operations and are not required to conduct modeling for the specific purpose of the Notice of Intent Sundry. Suggested regulatory language is set forth below:

Fracture Geometry Estimates

Proposed Change to BLM proposed 43 C.F.R. § 3162.3-3(d)(4)(iv):

(iv) The estimated or calculated fracture direction, length, and height, including the estimated fracture propagation plotted on the well schematics and on a map. The map must be of a scale no smaller than 1:24,000. An operator is not required to conduct additional fracture modeling to satisfy this requirement, but must provide the available information it has generated or used during the design of the proposed fracturing operation; and

To the extent we are misinterpreting the Notice of Intent Sundry requirement, and BLM does not amend the requirement, we note that the rule will impose additional costs that are not reflected in the current version of the economic analysis document for the proposed hydraulic fracturing rule. As noted above, simple modeling will likely result in costs of approximately $4,500 per well and sophisticated modeling can cost as much as $200,000 per well.

Unlimited Discretion to Request Additional Information

The proposed rule states that the "authorized officer may request additional information prior to the approval of the Notice of Intent Sundry" required for the approval of hydraulic fracturing operations.[80] In our comments on the original version of the proposed rule, we noted that this provision gives BLM unlimited discretion and was a power that could easily be abused.

[80] 78 Fed. Reg. 31,636, 31,675 (May 24, 2013).

In the preamble to the revised rule, BLM stated that requests would be limited to the information necessary to ensure permit applications are consistent with the applicable laws and regulations.[81] Although we remain concerned that the information request provision is still exceedingly broad, we appreciate the clarification and request that at least this limiting language be added to the text of the regulatory provision.

V. POST-FRACTURING INFORMATION AND REPORTING ISSUES

BLM has proposed the submission of certain information within thirty days of completing hydraulic fracturing operations. This reporting requirement would include, among other items:

(1) Information regarding fracturing fluid chemicals reported through FracFocus;

(2) The actual, estimated, or calculated fracture length, height, and direction;

(3) The volume of fluid recovered during flowback, swabbing, or recovery from production facility vessels;

(4) Documentation and explanation of deviations from the approved plan; and

(5) A signed certification that "wellbore integrity was maintained" and that fracturing fluid complied with all applicable permitting and notice requirements as well as all applicable federal, state, tribal, and local rules.

Our comments regarding the post-fracturing reporting requirements are in the subsections below. At the end of this section, we have included proposed regulatory language addressing our reporting concerns.

Endorsement of FracFocus/Extension of Reporting Deadline

BLM's revised proposal would allow the use of FracFocus for the submission of post-hydraulic fracturing job information. Because a number of states already require the use of FracFocus, allowing it to be used to satisfy BLM's reporting requirements will reduce compliance burdens.

We do note, however, that the thirty-day period that the proposed rule contemplates for finalizing post-fracturing reports and submitting data to FracFocus is insufficient. A typical well drilling and completion project involves many service companies, each of whom may have elements of the data that must be submitted with the post-fracturing report. Our members are concerned that the process of obtaining data from each of these entities, ensuring the completeness and accuracy of the data, compiling the data into a report, and satisfying certification requirements will not be possible in a thirty-day period. We request that BLM allow sixty days for post-fracture reporting.

[81] 78 Fed. Reg. 31,636, 31,679 (May 24, 2013).

Deviation Identification

We have significant concerns regarding the requirement to identify, document, and explain deviations as part of the post-fracturing report. To start, the term "deviation" is not defined—we assume that it means any difference, no matter how minor, from the approved plan. If this is the case, almost every piece of data included in the post-fracturing report will be a deviation, reflecting the normal, but inconsequential, variability between wells and operations. Cement detected ten feet higher than the calculated top of cement, for example, would be a deviation and would need to be explained, despite posing no wellbore integrity concerns.

Because it would impose significant, but unnecessary, administrative burdens, we strongly oppose the deviation provisions. Even if BLM attempts to make the provisions less burdensome, for example by limiting the provision to "material deviations," operators will have the burden of attempting to divine what the BLM would consider "material," and, if they fail to guess correctly, could face penalties for incomplete reporting. Operators should not shoulder this onus; BLM should instead simply request an explanation and additional information regarding issues it believes may be potentially significant after it has reviewed the completion reports that operators submit.

Certification Requirements

Given the nature of hydraulic fracturing operations, the certification requirements in the proposed rule are unrealistic and inflexible. First, the proposed rule appears to contemplate certification by a single signatory. But in many cases there is no single group within our operators' organizations with overall responsibility for every phase of well drilling, cementing, and completion. A drilling group will typically oversee drilling and cementing, after which a completions group will oversee perforating and hydraulic fracturing. In light of these divisions in responsibility, we request that BLM allow multiple individuals to certify the various aspects over which they will have responsibility.

Second, the proposed rule requires that operators certify that wellbore integrity was maintained before and throughout the hydraulic fracturing operation, but the certification does not include any language limiting the certification to the knowledge of the certifier or to the available information. This means that operators must legally certify wellbore integrity as an absolute factual certainty, even though they cannot directly inspect the thousands of feet of pipe in a well and must necessarily rely on available indicators of integrity, such as pressure testing.

We acknowledge that operators have responsibility for maintaining the integrity of their wells—there are nevertheless limits to what operators should be required to certify and we therefore request that BLM limit the certification requirement to belief and the available information. This will still impose an obligation for operators to conduct a careful inquiry of the available information before certification and will maintain liability for false certifications, but would properly limit the certification to what can be reasonably known.

Third, our members have strong concerns regarding the requirement to certify the submission of information that is known only to service providers. The primary example is information regarding fracturing fluid chemicals. Service companies closely protect this information as a

trade secret and, as a result, operators will never have the information necessary to know whether the fracturing fluid used on their wells complies with all applicable laws. More generally, some operators, in particular smaller companies, outsource the entire drilling and completion process to contractors. BLM states that the proposed rule follows the Colorado model on this issue, but because service companies would not certify their own information, in fact, it does not.

We understand and accept that BLM will hold operators responsible for any "incidents" associated with hydraulic fracturing that may occur, even those a contractor may cause. That is not justification, however, for operators to accept responsibility for certifying the accuracy of information service companies provide (or hold as confidential) and over which operators have no control.

We request that BLM allow an operator's contractors to certify compliance regarding areas over which only the contractors have the requisite knowledge. Without this change, operators will be forced to certify compliance in good-faith reliance on the assurances of their contractors. Where those assurances are false, operators could be prosecuted for making a false certification, even though it would be BLM forcing operators to certify issues beyond the operator's actual knowledge and control.

We emphasize that requested change would not result in an enforcement gap. In the event a service company provides inaccurate information, BLM would be able to bring an enforcement action against the service company directly. If BLM does not allow contractors to certify the contractor's own information, we request that BLM amend the proposed rule to require contractors to provide operators with all non-trade secret information required for the post-fracturing report within thirty days of completing the hydraulic fracturing or refracturing operation.

Fourth, as previously discussed, our members are concerned that BLM will require additional modeling of fracture geometry to satisfy the Notice of Intent Sundry requirement for approval of a hydraulic fracturing operation. The same concerns also apply to the submission of fracture geometry information in the post-fracturing report. We request that BLM clarify that no additional fracture modeling is required for purposes of post-reporting and that the reporting requirement be limited to providing such information, "if available." If we are incorrect, and additional modeling would be required, we note that BLM's economic analysis must account for the associated costs.

Finally, in the last section of this document, we discuss the difficulties in distinguishing between fracturing fluid flowback and produced water and note that there is no need for BLM to distinguish between the two. Consistent with those comments, we request that BLM replace the requirement to report the volume of recovered fracturing fluid with a requirement to report the volume of fluids recovered in the first thirty days following the start of flowback. This time-based standard would provide BLM with the information it wants, while avoiding subjective determinations of when fracturing flowback ends.

Post-Fracturing Reporting

Proposed Change to BLM proposed 43 C.F.R. § 3162.3-3(i):

(i) *Information that Must be Provided to the Authorized Officer After Completed Operations.* The information required in paragraphs (i)(1) through (i)(7) of this section must be submitted to the authorized officer within 60 days after beginning flowback subsequent to hydraulic fracturing or refracturing operations. The information is required for each well, even if BLM approved fracturing for a group of wells (see § 3162.3-3(d)). The information required in paragraph (i)(1) of this section must be submitted to the authorized officer through FracFocus, another BLM-designated database, or in a Subsequent Report Sundry Notice (Form 3160-5, Sundry Notices and Reports on Wells). If information is submitted through FracFocus or another designated database, the operator or the operator's designee must specify that the information is for a Federal or an Indian well and the information must be certified in accordance with § 3162.3-3(i)(6). The information required in paragraphs (i)(2) through (i)(7) of this section must be submitted to the authorized officer in a Subsequent Report Sundry Notice. The following information must be submitted:

...

(4) If available, information regarding the estimated or calculated fracture length and height. After the fracturing operation is completed, the operator is not required to conduct additional modeling or calculations of fracture length or height, unless the authorized officer requires additional information in response to an incident.

(5) The following information concerning the handling of recovered fluids:

(i) The estimated volume of fracturing fluid and produced water recovered from the well during the first 30 days of flowback.

(ii) The methods of handling the recovered fluids, including, but not limited to, transfer pipes and tankers, holding pond use, re-use for other stimulation activities, or injection; and

(iii) The disposal method of the recovered fluids, including, but not limited to, injection, hauling by truck, or transporting by pipeline. The disposal of fluids produced during the flowback from the hydraulic fracturing process must follow the requirements set out in Onshore Order Number 7, Disposal of Produced Water, Section III.E. (October 8, 1993, 58 FR 58506).

(6) A certification attesting, based on belief and the available information, that compliance was maintained with the issues identified below in (i) through (vii). Where appropriate due to a division of compliance responsibilities, the certification may be split among multiple signatories. Each signatory must be an employee of the operator or a contractor or agent of the operator and must have knowledge appropriate for making the certification. An operator is not liable for a false certification by a contractor or agent, but

nevertheless remains liable for any noncompliance with the substantive requirements covered by the certification.

(i) Wellbore integrity was maintained prior to and throughout the hydraulic fracturing operation, as required by paragraph (b) of this section;

(ii) Compliance was maintained with the requirements in paragraph (e) of this section;

(iii) Compliance was maintained with the requirements in paragraph (f) of this section;

(iv) Compliance was maintained with the requirements in paragraph (g) of this section;

(v) Compliance was maintained with the requirements in paragraph (h) of this section;

(vi) For Federal lands, the hydraulic fracturing fluid used complied with all applicable permitting and notice requirements as well as all applicable Federal, State, and local laws, rules, and regulations; and

(vii) For Indian lands, the hydraulic fracturing fluid used complied with all applicable permitting and notice requirements as well as all applicable Federal and tribal laws, rules, and regulations.

...

(8) The authorized officer may require the operator to provide documentation substantiating any information submitted under paragraph (i) of this section and may request an explanation regarding information which does not match the approved plan and would therefore reasonably be expected to have a material impact on the protection of usable water.

VI. EXEMPTION OF TRADE SECRETS FROM PUBLIC DISCLOSURE

Although BLM has significantly improved the trade secret provisions in the proposed rule, we remain concerned regarding the lack of a protection mechanism for information submitted to the BLM in a Notice of Intent Sundry seeking approval of a hydraulic fracturing or refracturing operation.

Many of our members consider well development and completion data to be trade secrets. In particular, our members hold fracture geometry information, such as microseismic modeling data and other evaluations, to be protected trade secrets. The problem is that the proposed rule requires inclusion of this information in the Notice of Intent Sundry submitted for approval of a

hydraulic fracturing plan,[82] but the proposed rule provides that the submission of information in a sundry notice will be deemed to have waived any protection from public disclosure.[83]

BLM has proposed a mechanism for withholding information based on a claim that the information is exempt from public disclosure. But this provision is inadequate because the cross-references in the exemption provisions indicate that claims can only be made for information submitted following the hydraulic fracturing operation. There is no means of claiming trade secret protection for information required to be included with the Notice of Intent Sundry requesting approval of a hydraulic fracturing operation.[84]

Another concern relates to the disclosure of chemical additives in hydraulic fracturing fluid. First, the chemical constituent information that the proposed rule requires should be revised to limit the information to chemicals that are intentionally added to the fracturing fluid. Second, as currently drafted, the rule could be interpreted as requiring information regarding additives and the maximum concentration of a chemical constituent in each additive, which would jeopardize trade secret information by making it easier to reverse engineer the additive in the event the information is disclosed to the public. BLM should limit the reporting requirement to the maximum ingredient concentration in the overall fracturing fluid, and not the maximum ingredient concentration for each additive. Reporting based on the overall composition of the fracturing fluid is consistent with BLM's objectives to protect usable water while also providing additional protection for legitimate trade secret information.

We request that the BLM adopt the regulatory text below to provide a mechanism for handling trade secret information in a confidential manner.

To Protect Trade Secrets

Proposed change to move "estimated pump pressures" from BLM proposed 43 C.F.R. § 3162.3-3(d)(3) to § 3162.3-3(d)(4):

(3) The proposed measured depth of perforations or the open hole interval and information concerning the source and location of water supply, such as reused or recycled water, or rivers, creeks, springs, lakes, ponds, and wells, which may be shown by quarter-quarter section on a map or plat, or which may be described in writing. It must also identify the anticipated access route and transportation method for all water planned for use in fracturing the well.

(4) A plan for the proposed hydraulic fracturing design that includes, but is not limited to, the following:

(i) The estimated total volume of fluid to be used;

[82] 40 C.F.R. § 3162.3-3(d) (proposed).

[83] 40 C.F.R. § 3162.3-3(j) (proposed).

[84] *See* 40 C.F.R. § 3162.3-3(j) (proposed language cross-references to 43 C.F.R. § 3162.2-3(i), but not 43 C.F.R. § 3162.3-3(d)).

(ii) The estimated pump pressures and anticipated surface treating pressure range;

(iii) The maximum injection treating pressure; and

(iv) The estimated or calculated fracture direction, length, and height, including the estimated fracture propagation plotted on the well schematics and on a map. The map must be a scale no smaller than 1:24,000; and

(v) The estimated vertical distance to the nearest usable water aquifer above the fracture zone;

Proposed change to move "actual pump pressures" from BLM proposed 43 C.F.R. § 3162.3-3(i)(2) to § 3162.3-3(i)(3):

(2) The actual measured depth of perforations or the open-hole interval and the source(s) and location(s) of the water used in the hydraulic fracturing fluid.

(3) The actual pump pressures, actual surface pressure, and rate at the end of each stage of the hydraulic fracturing operation, and the actual flush volume, rate, and final pump pressure.

Proposed change to BLM proposed 43 C.F.R. § 3162.3-3(i)(1):

(i) *Information that Must be Provided to the Authorized Officer After Completed Operations.*

(1) The true vertical depth of the well; for each additive used (including base fluid) the trade name, supplier, and purpose; and for each ingredient intentionally added to the hydraulic fracturing fluid, the name of the ingredient, the Chemical Abstract Service Number (CAS #) if applicable, and the maximum ingredient concentration in the hydraulic fracturing fluid (% by mass).

Proposed change to BLM proposed 43 C.F.R. § 3162.3-3(j):

(j) *Information Exempt from Public Disclosure.*

(1) Information provided in the Notice of Intent Sundry under the requirements of paragraph (d)(4) of this section and in the Subsequent Report Sundry Notice under the requirements of paragraphs (i)(3) and (i)(4) of this section will not be made public for 5 years from the date of filing of the notices. For information required in paragraph (i)(1) of this section that the vendor, service provider, or operator claims to be exempt from disclosure, the person so claiming must submit to the BLM a one-time affidavit that:

(i) Affirms that the information is not publicly available;

(ii) Affirms that the release of the information would likely harm the competitive position of the person or entity claiming the exemption; and

(iii) affirms that the information is not readily apparent through reverse engineering.

Revise proposed § 3162.3-3(j)(2) by striking "operator" and replacing it with "*person or entity that claimed the exemption from public disclosure.*"

(3) If the BLM determines that the information is not exempt from public disclosure under 18 U.S.C. § 1905 or other authority, the BLM will provide the person who claimed the exemption 20 business days' notice, beginning the day after the notice is received, of the BLM's intention to disclose the information to the public. The BLM will provide the person who claimed the exemption an opportunity to object to the determination and, if needed, to appeal the overruling of the objection to the Interior Board of Land Appeals under 43 C.F.R. Part 4, subparts A, B, and E.

Revise proposed § 3162.3-3(j)(4) by striking "operator" and replacing it with "*claimant.*"...

VII. PROPOSED VARIANCE PROVISIONS

In the preamble to the proposed rule, BLM notes that it intends to allow operators to request case-by-case variances from the proposed rule standards and to also provide a means for BLM to work with states and tribes to issue a variance that would apply to all wells in a field, a basin, a state, or within Indian lands.[85] We generally approve of BLM's proposal to allow case-by-case variances, as well as more generally-applicable variances. We would prefer a general deferral to state programs, or BLM's incorporation of these programs, but the variance provision offers at least the possibility of eliminating overlapping and duplicative requirements on a case-by-case basis as a means of reducing administrative costs and improving efficiencies.

As presently proposed, however, there are a number of problems with the current version of the variance provisions. First, the variance request process is unclear, especially the process by which a state would be able to initiate a process leading to the substitution of state programs for BLM's regulations.

Second, we find the "meet or exceed" criterion BLM proposes to be problematic because, as elsewhere discussed in this document, the current proposal includes requirements that are more stringent than current industry best practices and state standards, but which the BLM has not demonstrated will actually decrease the already low risks associated with hydraulic fracturing. In short, we are concerned that the "meet or exceed" criterion would allow denial of a state's request for recognition of equivalency, unless the state adds unnecessary requirements to match BLM's regulations.

[85] 78 Fed. Reg. 31,636, 31,677 (May 24, 2013).

CELs for casing strings cemented to surface is a prime example of our concern. BLM acknowledges that CELs are generally not run for surface casing strings and no state requires a CEL for surface casing, absent other evidence that cement integrity might be impaired. Under the meet or exceed standard, BLM could deny a state request on grounds that the state's requirements lack a surface casing CEL provision and, therefore, do not meet or exceed BLM's requirements—despite BLM's failure to establish that these CELs will actually and materially decrease risk.

Third, BLM indicates in the preamble to the proposed rule that the possible adoption of state procedures is limited to "operational activities, including monitoring and testing technologies, and do[es] not apply to the actual approval process."[86] BLM does not provide any criteria, however, for determining whether a regulated activity is an "operational activity" or falls rather into the "approval process." Equally important, BLM's approach forsakes the administrative and regulatory efficiencies that could be gained through cooperation with the States. BLM recognizes that "it makes sense for both the BLM and the States or tribes with oil and gas activity to explore ways to coordinate implementation of this revised proposed rule."[87] And BLM acknowledges that there are presently existing agreements that designate certain permitting responsibility for activities within particular states to state agencies.[88] But BLM fails to articulate any basis for its decision to exclude administrative activities from the scope of any equivalency program implemented under the proposed rule. BLM must consider how its current systems used to process drilling permits can be modified to meet its future needs under the proposed rule and should address how those systems can be better integrated with State or tribal databases that are already in place for permitting, inspection and reporting to avoid unnecessary duplication and to promote optimal data management and sharing. To that end, we propose that BLM, through this rulemaking, recognize that its long history of joint regulation of drilling operations in California, Colorado, Montana, North Dakota, New Mexico, Utah, and Wyoming demonstrates that the recent regulatory amendments specifically addressing hydraulic fracturing provide protections equivalent to those BLM proposes in this rule.

Another concern is that the variance provisions give BLM unfettered discretion to revoke or modify a variance. The regulatory text provides that the variance can be modified based simply on a change in policy or even for "other reasons." This is extraordinarily broad language that does not provide any factual criteria that BLM must meet before modifying or revoking a variance. Without objective criteria, the variance process fails to provide operators with a reasonable assurance that regulatory requirements will not arbitrarily change and result in stranded capital resources and lost reserves, in the form of wells that may no longer be completed or produced, due to a modified or revoked variance.

In light of the above issues, we are proposing the following regulatory process and text. The proposed text does not address Indian lands, but we are supportive of tribal autonomy in the event the tribes favor a similar process for requesting an equivalency determination.

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[86] 78 Fed. Reg. 31,636, 31,660 (May 24, 2013).
[87] 78 Fed. Reg. 31,636, 31,644 (May 24, 2013).
[88] 78 Fed. Reg. 31,636, 31,645 (May 24, 2013) (citing an agreement "for Permitting and Oil and Gas Operations on BLM and National Forest Service Lands in Colorado").

Variance Requests and Equivalency Determinations

Proposed Change to BLM proposed 43 C.F.R. § 3162.3-3(k):

(k) *Operator Requests for a Variance from the Requirements of this Section.* An operator may make a written request to the authorized officer for a variance from the requirements under this section. The BLM encourages submission using a Sundry Notice (Form 3160-5, Sundry Notices and Reports on Wells).

(1) A request for a variance must specifically identify the regulatory provision(s) of this section for which the variance is requested. The request must explain why the operator needs the variance and how the operator will satisfy the objectives of the regulation from which the variance is sought.

(i) After considering the objectives of the regulation, the authorized officer may approve the request, approve the request in part, or deny the request. The authorized officer's action is subject to State Director review under section 3165.3(b) of this title.

(ii) A variance under this section does not constitute a variance to provisions of other regulations, laws, or orders.

(2) Upon determining that a previously-granted variance no longer satisfies the objectives of the regulation, written notice and justification to the operator, and a 30-day opportunity to respond, the authorized officer may rescind or modify a variance granted under subsection (k)(1). The authorized officer's action is subject to State Director review under section 3165.3(b) of this title.

New proposed 43 C.F.R. § 3162.3-3(l):

(l) *State Requests for an Equivalency Determination.* A State may request that the BLM allow operators of federal leases within the boundaries of the state to comply only with that State's regulatory and programmatic requirements instead of the standards set forth in sections 3162.3-3 and 3162.5-2.

(1) The State shall submit a written request identifying the requirements and prescriptions that the State believes should be employed, as well as the BLM regulations that would be supplanted. The State may identify whichever of its regulations and standards it considers relevant and may identify all of the standards set forth in this section, or only a subset of the BLM standards.

(i) The State shall include in the request information from the prior two calendar years concerning instances of contamination of usable groundwater or of surface waters used for drinking, irrigation, or livestock, directly resulting from hydraulic fracturing or refracturing operations.

(ii) Upon receipt of a request, the BLM shall publish notice of the request in the Federal Register and provide the public 30 days opportunity for comment.

(iii) The BLM will grant the request unless it determines that the requirements identified by the State are not reasonably equivalent to the BLM requirements identified in the request and would materially increase the risk of impaired cement integrity or the contamination of usable groundwater or of surface waters used for drinking, irrigation, or livestock, as a direct result of hydraulic fracturing or refracturing operations.

(iv) The BLM's determination in response to the request may be appealed by any affected person to the Director, BLM. The Director's response to the appeal will be final agency action for purposes of the Administrative Procedure Act.

(2) *Equivalency Deemed Approved.* Because they have standards in place meeting all of the objectives of this section, the following States with significant oil and gas activity on public lands are deemed to have been granted a full determination of equivalency from the requirements of the BLM's regulations in this section: California, Colorado, Montana, North Dakota, New Mexico, Utah, and Wyoming. This determination does not apply to oil and gas operations on lands subject to the trust responsibility of the Bureau of Indian Affairs.

(3) *Reconsideration of Equivalency Determinations.*

(i) Any affected person may petition the BLM to reconsider an equivalency determination, provided the State has modified one or more of the provisions included in the equivalency determination and the petitioner provides reasonable grounds, supported by credible evidence, that the modifications would materially increase the risk of impaired cement integrity or the contamination of usable groundwater or of surface waters used for drinking, irrigation, or livestock, as a direct result of the activities regulated in this section.

(ii) If not granted within 60 days, a petition to reconsider an equivalency determination shall be deemed denied. The BLM may also deny a petition to reconsider before the end of the 60-day period by sending written notice to the petitioner. Denial of a petition to reconsider may be appealed by the petitioner to the Director, BLM. The Director's response to the appeal will be final agency action for purposes of the Administrative Procedure Act.

(iii) Upon granting a petition for reconsideration, the BLM shall provide written notification to the petitioner and the State and allow the State at least 90 days to respond. After the end of the 90 days, or such longer period granted by the BLM, the BLM shall publish in the Federal Register its proposed decision on whether to revoke the equivalency determination and shall provide at least 30 days for public comment. Following the public comment period, the

BLM will revoke the equivalency determination only if it determines that the modifications to the state program materially increase the risk of impaired cement integrity or the contamination of usable groundwater or of surface waters used for drinking, irrigation, or livestock, as a direct result of hydraulic fracturing or refracturing operations.

(iv) The BLM's determination to revoke or not revoke an equivalency determination may be appealed by any affected person to the Director, BLM. The Director's response to the appeal will be final agency action for purposes of the Administrative Procedure Act.

VIII. ADMINISTRATIVE ISSUES

Delays for Issuance of Permits

The approval process that the proposed rule would implement will result in additional significant delays in oil and gas projects conducted on federal and tribal lands. BLM already fails to meet statutory mandates for issuing drilling permits. There is no reason to believe that the addition of more requirements will not make this problem worse. Delays will still occur even though BLM is no longer proposing approvals for other types of stimulations, such as acid treatments.[89]

BLM recognizes that delays in approvals can be costly for operators, but the agency does not anticipate that the submittal of additional hydraulic fracturing-related information with drilling applications will significantly impact the timing of the approval of drilling permits.[90] BLM's own statements contradict this position:

> The processing of NOI Sundry, SR Sundry, and variance requests associated with the rule would pose additional burden to the BLM; however, it is unclear the extent to which the BLM can meet the additional burden with existing capacity. An additional 8.44 FTE of workload is estimated to be required to meet the administrative burden of the rule in the first year of implementation.[91]

BLM must account for the costs associated with these delays in its assessment of the costs and benefits of the rule.

According to John Dunham & Associates' economic analysis (see Appendix A), a one-week delay would result in average costs of about $1,580 per well, based on an interest rate of only seven percent. This equals to over $5.63 million in additional costs per year. Given the amount of data that BLM intends to review, delays may very well be longer and costs higher.

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[89] We agree with the BLM's proposal to exclude these types of stimulation operations from the scope of the proposed rule.

[90] 78 Fed. Reg. 31,636, 31,648 (May 24, 2013).

[91] 78 Fed. Reg. 31,636, 31,666 (May 24, 2013).

IX. THE ECONOMIC ANALYSIS IS INADEQUATE AND THE RULE IS ARBITRARY AND CAPRICIOUS

The economic analysis for the proposed hydraulic fracturing rule is woefully deficient. As previously discussed in our comments on the substantive provisions of the rulemaking, BLM has underestimated the costs of virtually every aspect of the proposed rule. The cost deficiencies are numerous and significant, so those discussions will not be repeated here. We note only that total costs appear to be on the order of approximately $345 million.[92]

The remainder of this section discusses problems with BLM's assessment of the proposed rule's benefits and deficiencies in the agency's evaluation of alternatives to the rule. Without significant revisions, we believe that that the economic analysis renders the proposed rule arbitrary and capricious.

Purported Benefits are Exceedingly Uncertain

BLM asserts that, "[w]hile the potential benefits of the rule are more challenging to monetize than the costs, they are significant."[93] Exactly how the agency reaches this conclusion is unclear, given that most of the preamble discussion regarding the benefits framework is devoted to declarations of what the agency does not know. For example:

- "The primary challenge in monetizing benefits lies in the quantification of a risk that is largely unknown."[94]

- "There are limitations in using the BLM data on undesirable events for this [benefits] analysis." "As such, there is difficulty in quantifying the level of risk reduction that would be attributed to the regulations, even though the regulations would most certainly reduce risk."[95]

- "Damage, in general, is unknown . . . ."[96]

- "Further uncertainty lies in the estimation of benefits and the cumulative effect of the rule's provisions on mitigating the potential risks of hydraulic fracturing operations. This rule has specific provisions that would help operators and the BLM better identify potential issues in wellbore integrity and fracturing design, before operations begin.

[92] This figure, taken from the economic analysis that John Dunham & Associates prepared (attached as Appendix A) does not include certain costs elements. Among other examples, water testing costs of approximately $28.4 million to $42.5 million per year and fracture modeling costs of approximately $15.45 million per year are not included in John Dunham & Associates' assessment.

[93] 78 Fed. Reg. 31,636, 31,663 (May 24, 2013) (emphasis added).

[94] 78 Fed. Reg. 31,636, 31,663 (May 24, 2013).

[95] 78 Fed. Reg. 31,636, 31,663 (May 24, 2013).

[96] 78 Fed. Reg. 31,636, 31,663 (May 24, 2013).

However, it is difficult to attribute benefits to one single test (for instance the CEL) when that is only one part of the overall evaluation of wellbore integrity."[97]

- "Thus far, all reported events of groundwater contamination that attribute the cause of a contamination event to well stimulation operations have not been confirmed."[98]

BLM makes no attempt to discuss the extent to which the requirements of the rule will produce the "significant" benefits of the rule, as compared to the regulatory framework already in place. BLM notes "incident rates" and potential damages (see below) as a means of describing the potential risks that the rule will mitigate, but that is all the agency attempts to quantify.

BLM seems to be relying on the concept that more requirements necessarily means a reduction in risk. Often, however, existing measures are appropriate and additional regulations and requirements will result in no significant change, other than increased burdens on the regulated community. This is precisely the case here. BLM has a regulatory duty to explain how and to what extent the additional requirements it seeks to impose will produce actual benefits—merely stating the agency's confidence that it will be so is insufficient—and this insufficiency renders the rulemaking arbitrary and capricious.

Errors in the Numerical Data Discussed in BLM's Benefits Analysis

Although BLM does not attempt to provide a numerical value of the monetary benefit it believes will result from the proposed rule, the agency's economic analysis document does purport to provide a range of possible incident frequencies and incident costs. Unfortunately, there are a number of significant errors in the BLM's estimates. We submit that these errors are so fundamental as to render BLM's economic analysis procedurally inadequate and the rule itself arbitrary and capricious.

Incident Rates are Inappropriate

The economic analysis document for the proposed rule states that the likelihood of a "minor incident" associated with hydraulic fracturing is 2.7 percent and the likelihood of a "major incident" is 0.028 percent. It is readily apparent that neither number accurately reflects hydraulic fracturing incident rates. The very fact that these are the best estimates BLM can produce reflects that hydraulic fracturing "incidents" are exceedingly rare.

As an initial matter, we note that BLM's estimated incident rates are not based on data that must be submitted to the agency when "undesirable events" occur, such as accidental spills or releases of hydrocarbon fluids, produced water, hydraulic fracturing flowback fluids, or other substances. As explained in BLM's 2006 Notice to Lessees document (NTL-3A), operators are required to

[97] 78 Fed. Reg. 31,636, 31,664 (May 24, 2013) (emphasis added).

[98] BLM's Environmental Assessment at 26.

notify the agency when undesirable events occur and must then submit a written report that provides the "specific nature and cause of the event."[99]

BLM represents that it has not relied on this undesirable events data because the submissions do not specify whether the undesirable events are associated with hydraulic fracturing operations. The better conclusion is that BLM's own data demonstrates that there are no significant issues associated specifically with hydraulic fracturing (making this rule unnecessary). BLM's Environmental Assessment ("EA") document supports this conclusion. BLM states in the EA: "Thus far, all reported events of groundwater contamination that attribute the cause of a contamination event to well stimulation operations have not been confirmed. Therefore, it is impossible to predict how many contamination events the proposed amendments would prevent . . . ."[100]

BLM's minor incident rate is based on data in a survey the Energy Institute conducted that, according to the BLM, shows that 2.7 percent of oil and gas violations were in a violation category associated with hydraulic fracturing. One problem is that "groundwater contamination (complaints only)" was one of the "violation" categories BLM included as part of the 2.7 percent. First, this category appears to include non-hydraulic fracturing events. Second, including unproven complaints as even a partial basis for a hydraulic fracturing incident rate is unscientific, highly objectionable, and wholly inappropriate.

A more fundamental problem is that, without additional data, the fraction of violations that are associated with hydraulic fracturing operations provides no useful information about the actual number of incidents per year attributable to hydraulic fracturing. Yet BLM still seems to interpret the data as indicating that 2.7 percent of all hydraulic fracturing operations will experience an incident. This extrapolation is analogous to observing that fifty percent of Americans go to church on Sunday and then concluding that the average American goes to church approximately 182 days a year.

BLM's calculated rate for "major incidents" is equally flawed. The major incident rate is based on a *single* incident in 2012 in which the fracture path of one well intersected that of a second well and pushed fluids out of the second well. Approximately 60 barrels of crude oil escaped secondary containment. BLM took this one incident and divided it by the 3,566 hydraulic fracturing events it expects in the first year the rule is implemented. According to BLM, this yielded a rate of 0.028 percent *per year*.

The problem is apparent—hydraulic fracturing operations are not a recent innovation that suddenly commenced in 2012—they have been going on for decades. Indeed, even the unconventional shale plays have been extremely active for a period of years. After decades of

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[99] The Notice to Lessees document is available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2006.Par.34677.File.dat/im2006-061attach1.pdf.

[100] Prominent investigations associated with assertions that oil and gas operations have contaminated groundwater have been retracted. In March 2012, EPA dropped its allegations against Range Resources regarding wells in Parker County, Texas. In July 2012, EPA announced that its sampling of drinking water wells in Dimock, Pennsylvania had determined that there were not levels of contaminants that would require agency action. More recently, in June 2013, EPA decided not to finalize its draft report regarding wells in Pavillion, Wyoming.

operations, BLM references only one incident, yet states that it expects one such incident per year. BLM must either identify other major incidents in other years, or decrease the incident rate based on averaging over a much longer period of time. Again, this incident is the only concrete example of a hydraulic fracturing incident BLM provides in the entire preamble and accompanying economic analysis.

Damage Amounts are Inappropriate

The economic analysis document states that BLM's estimate of the remediation costs for a minor incident is approximately $15,000. This figure is not derived from any study of "minor incidents" but rather represents the remediation costs associated with the single 2012 incident (see above) on which the agency based its incident rate for *major* events. This is plainly inappropriate—the costs for what BLM describes as a "major incident" should not be used as the basis for damages resulting from a "minor incident."

For major events, BLM states that the Federal Remediation Technologies Roundtable ("FRTR") has a number of case studies on its website, but notes that the FRTR does not list any case studies of events resulting from hydraulic fracturing operations. As documented in the introduction to these comments, this is because there are no demonstrated examples of aquifer contamination associated with hydraulic fracturing operations. BLM then states, without explanation, that its analysis assumes a cost of $1 million to remediate a contaminated aquifer.

No basis for the $1 million damages number is provided. The implication is that the value is based on the FRTR case studies, but there is no actual statement that the $1 million is based on one or more case studies. In fact, there is no discussion of the case studies at all and no description of how the factual circumstances associated with the case studies could be similar to what might be expected from aquifer contamination associated with hydraulic fracturing (should such a future event occur).

BLM also states: "We believe remediation efforts could range from $15,000 to hundreds of thousands of dollars for an incident that affects the surface environment." This one sentence is the entirety of the agency's "discussion" of major event surface damages. Without a basis, these numbers are meaningless. And without informing the public about the basis, public comment and participation are meaningless. Both as a matter of science and law, BLM must do more. Agency action is only lawful when the action can be upheld on the bases the agency itself articulates. Because BLM has advanced a risk assessment and made assertions related to potential damages without documenting any support for the agency's conclusions, its risk analysis cannot meet the standard the law requires.

Insufficient Alternatives and Other Required Analysis

As documented in these comments, BLM's proposed rule will significantly exceed $100 million in annual costs, making it a significant regulatory action for which an examination of alternative approaches is necessary. Although BLM makes passing reference to alternatives in the preamble to the rule and in the agency's economic analysis, it has not engaged in any meaningful or legally sufficient analysis of alternatives to the rule that is proposed.

BLM considered only two alternatives to the revised proposal: (i) requiring CELs for all wells; and (ii) requiring CELs for all wells, but eliminating liner and tank requirements for fracturing fluid flowback. Practically speaking, there is only one alternative because almost all operators already use either lined pits or tanks for the management of flowback fluids. It is therefore not surprising that BLM estimates that the average difference in costs between the two alternatives would be only $9 per well.[101] This means that the cost difference between the two alternatives is less than 0.02 percent to 0.03 percent of the costs BLM projects.

For the alternatives analysis to be meaningful, BLM must at least assess an alternative that does not impose a CEL requirement for surface casing and other casing strings where cement is circulated to surface. First, BLM acknowledges that CELs are typically not run for surface casing—such a significant departure from industry best practices surely merits consideration in the alternatives analysis. Second, the surface casing component alone makes up at least sixty-three percent of the costs BLM projects.

Because the costs associated with the proposed rule are much higher than those BLM estimates, well over $100 million per year, BLM must also reconsider its current assessments under the following: (i) Executive Order 13563; (ii) Executive Order 12866 (Regulatory Planning and Review); (iii) the Regulatory Flexibility Act of 1980; (iv) the Small Business Regulatory Enforcement Fairness Act; and (v) the Unfunded Mandates Reform Act. To comply with the National Environmental Policy Act, BLM will also need to reassess its Environmental Assessment and Finding of No Significant Impact, based on, among other considerations, the social impacts attributable to the cost of this expensive rulemaking.

X. OTHER QUESTIONS ON WHICH BLM REQUESTED INPUT

Enforcement Issues Associated with Deference

BLM requested feedback regarding the practical enforcement challenges that would result if BLM deferred to state or tribal laws or procedures. We believe that BLM could write the hydraulic fracturing rules to incorporate state and tribal requirements in a way that would not limit the agency's enforcement powers.

BLM could require by rule, and as a condition of drilling permits, that operators must obtain approvals from the relevant state and tribal oil and gas agencies and must comply with the conditions these approvals impose. In this manner, a violation of the state or tribal approval would also constitute an enforceable violation of BLM's requirements.

Incorporation by reference for the sole purpose of enforceability is relatively common in the regulatory sphere. Many states, for example, have regulations that do nothing more than incorporate EPA emissions standards. By doing so, states make the federal standards a part of state law and ensure that they have authority to independently enforce the standards. Nothing prevents BLM from adopting the same approach.

[101] 78 Fed. Reg. 31,636, 31,666 (May 24, 2013).

Drafted correctly, a federal rule that defers to state and tribal laws and procedures regarding oil and gas operations would also provide the same level of information the states and tribes receive to BLM. BLM would simply need to specify that it receive a copy of required submissions. This would allow BLM to meet its stewardship responsibilities without significantly and needlessly increasing the operators' administrative burdens .

Feedback Regarding When Flowback Ends

BLM requested feedback regarding when fracturing fluid flowback ends and production begins, due to concerns regarding a potential overlap with Onshore Order No. 7's requirements for the storage and management of produced water. BLM asked specifically whether it would be sufficient to base a cutoff on the onset of the production of oil and gas.

There is no reason for BLM to distinguish between fracturing fluid flowback and produced water. From a practical perspective, fracturing fluids injected into an oil and gas formation will mix with the formation fluids. The initial flowback following a hydraulic fracturing operation will primarily be composed of fracturing fluid, because the injected fracturing fluid will have largely displaced the fluids in the near-wellbore environment. As time passes, the fluids will comprise an increasing fraction of native formation fluids. In fact, fracture fluids can be recovered from a well months and even years after flowback is initiated.

If BLM does attempt to distinguish between fracture fluid flowback and produced water, we do not believe that the cutoff should be based on the onset of the production of oil and gas. This is primarily because certain regulations, most notably EPA's New Source Performance Standards for the Oil and Gas Sector (40 CFR Part 60 Subpart OOOO) conflate flowback operations and production operations. In particular, Subpart OOOO will eventually require that operators of hydraulically fractured natural gas wells route to a gas sales line all salable quality gas separated from fracturing flowback fluids as soon as doing so is practicable.[102]

Although we do not believe that BLM can distinguish between fracturing fluid flowback and produced water, and have suggested that BLM use a more realistic term (recovered water), should BLM insist on drawing such a distinction, it would be simpler for BLM to use a time-based cutoff to avoid overlap between the flowback provisions in the proposed hydraulic fracturing rule and Onshore Order No. 7. The cutoff would establish a period of time during which liquids would be managed pursuant to the hydraulic fracturing rule and after which Onshore Order No. 7 would become effective. BLM's authorized officer could establish this cut-off for a particular project, to account for the local geology and the natural variances in the rate of fluid return from field-to-field.

This approach will allow BLM to regulate water management and protect environmental resources in an effective manner that accounts for the unique characteristics of each individual mineral reservoir. To the extent there is any meaningful difference between fluid flowback and produced water, the point where the former concludes and the latter commences is different in each field, because each reservoir returns the majority of stimulation waters at different rates. In the Haynesville shale, for example, stimulation waters are generally returned in thirty days. In

[102] 40 C.F.R. § 60.5375(a)(2).

the Bakken, by contrast, stimulation waters may take more than sixty days to return. As such, any distinction between fluid flowback and produced water must account for the nature of the reservoir.

A time-based approach accounting for the characteristics of the reservoir would allow operators flexibility to develop projects in a manner that is the most sensitive to the economic and environmental concerns the particular project's circumstances present. Some will need to manage large volumes of fluids for only a short period of time. These operators would be able to use a temporary pit that has been lined in accordance with proposed 43 C.F.R. § 3162.3-3(h) and then switch to a smaller pit meeting the requirements of Onshore Order No. 7 to manage the lower volumes associated with the post-flowback period. Operators who will need to manage large volumes of produced water during the productive life of the well might, instead, opt to install a permanent pit meeting Onshore Order No. 7 requirements and use that pit for both immediate fluid flowback and longer-term produced water management.

Our proposed regulatory language for a time-based approach can be found below. We expect that operators who anticipate needing the use of a temporary pit for a longer period of time could request a case-by-case variance, pursuant to 43 C.F.R. § 3162.3-3(k).

Storage of Recovered Fluids

Proposed Change to BLM proposed 43 C.F.R. § 3162.3-3(h):

(h) During an initial period of time, determined by the authorized officer based on expected conditions in the reservoir, storage of all fluids recovered must be in either tanks or temporary lined pits.

(1) The following pits must meet the requirements set out in Onshore Order Number 7, Disposal of Produced Water, Section III.E. (October 8, 1993, 58 FR 58506):

(i) Any pit used for the storage of fluids recovered after the end of the initial period determined by the authorized officer; and

(ii) Any pit used only for the storage of fluids recovered during the initial period, but remaining in service for more than nine (9) months.

(2) The authorized officer may require any other BLM approved method reasonably necessary to protect the mineral resources, other natural resources, and environmental quality from the release of recovered fluids.

Thank you for consideration of these comments,

Dan Naatz
Vice President, Federal Affairs
IPAA

Kathleen Sgamma
Vice President, Public & Government Affairs
Western Energy Alliance

Appendix A:

Economic Assessment by John Dunham & Associates

JOHNDUNHAM
&ASSOCIATES
The Winning Side of Economics

MEMORANDUM

TO: Kathleen Sgamma, VP of Government & Public Affairs, Western Energy Alliance
FROM: John Dunham, Managing Partner
DATE: July 22, 2013
RE: Business Impact of Revised Completion Regulations

As per your request, we have examined the impact of a proposal that would require that companies drilling new wells for the extraction of petroleum products on federal lands face a plethora of new rules. The proposed regulation is being promulgated by the US Department of Interior's Bureau of Land Management (BLM) and as currently written, would apply only to federal wells on or impacting Federal and Indian lands, or split estate lands. However, this definition is remarkably broad and could potentially be applied to companies drilling on private lands in the western states.[1]

Assuming a best case scenario, where the BLM approves 100 percent of all applications and assuming capital costs of only 7 percent, these regulations – if applied to all 3,566 projects currently under development in the western states – would **cost at least $345.592 million annually**.[2] The anticipated average cost per well is estimated at $96,913. Table 1 below outlines the estimated costs by source.

Table 1
Revised Cost Calculations

	JDA Estimate	Percent of Total
Initial Delay Costs	$ 5,632,585	1.63%
Administrative Costs	$ 1,765,170	0.51%
Enhanced Casing Costs	$ 310,063,700	89.72%
Cement Log Costs for "Well Types"	$ 2,603,465	0.75%
Cement Log Delay Costs	$ 5,914,436	1.71%
Subtotal	$ 325,979,357	94.32%
Cost of Tanks over Pits	$ 19,613,000	5.68%
Total Costs	$ 345,592,357	100.00%

Proposed Regulation and Background:

In May of 2012, the BLM proposed amendments to current regulations (43 CFR 3160.0-3) that would lead to significantly more permitting and operational expenses for companies drilling and completing oil and gas wells on federal lands. At that time, John Dunham and Associates (JDA) estimated that the regulations would impose costs on operators in excess of $1.284 billion. (See Table 2 on the following page.)

1 For the purpose of this analysis the western states include: Arizona, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. Also includes estimated wells subject to the rules due to rework.

2 This figure is based on an average of two models. The first is based on the carrying costs of the project and the second on the discounted lost value of petroleum output. This also includes the costs associated with refracturing operations.

Since that time, the BLM has issued revisions to the proposed rule in response to the comments that it received from industry, environmentalists and the general public. The net result of these changes is that the implementation of the rule could cost the industry substantially less to implement; however, the total annual costs would still be far in excess of $325.9 million, not accounting for the use of water storage tanks over lined pits. The major revisions that the BLM has incorporated into the proposed rule consist of:

- The elimination of provisions to require that all well stimulations, including acid stimulations, undergo the full requirements set forth by the proposed rule;
- The elimination of requirements that companies undertaking oil and natural gas well development submit an application to the BLM for approval prior to completing the well;
- The significant modifications of requirements that cement logs be required on all wells but rather on representative wells and that wells of a "similar type" do not need to undergo this procedure unless it is deemed necessary by the particular well characteristics;
- Substantial changes in the administrative reporting and permitting burden placed on operators by the proposed rule.

Table 2
Initial Cost Component Comparison

	BLM	Percent	JDA	Percent	Difference
Initial Delay Costs	$ -	0.00%	$ 56,404,007	4.39%	$ 56,404,007
Pre Completion Delay Costs	$ -	0.00%	$ 38,326,948	2.99%	$ 38,326,948
Administrative Costs	$ 3,798,558	6.52%	$ 2,503,710	0.20%	$ (1,294,848)
Enhanced Casing Costs	$ -	0.00%	$ 439,793,100	34.25%	$ 439,793,100
Cement Bond Log Costs	$ 44,383,950	76.13%	$ 736,773,570	57.38%	$ 692,389,620
Mechanical Integrity Test Costs	$ 10,116,000	17.35%	$ 10,116,000	0.79%	$ -
Total Costs	$ 58,298,508	100.00%	$ 1,283,917,335	100.00%	$ 1,225,618,827

As a result of these changes, there are substantial differences in the calculation of the cost of the proposed rule from those calculated in June 2012. These are outlined below.

Number of Impacted Wells. The BLM assumes that this rule will apply to approximately 3,566 oil and natural gas wells.[3] Based on pending APD applications, JDA's earlier analysis calculated that 5,058 wells in just the 13 western states would be impacted. Without more detail from the BLM it is difficult to determine where the agency assumes these impacted wells will be located, but most of the federal leaseholds are in the modeled states. Therefore, to ensure that these estimates are moderate, the numbers in this analysis are calculated using 3,566 impacted wells rather than the original 5,058.

The elimination of specific provisions of the rule relating to all stimulation procedures for oil and natural gas wells. This specific provision had been estimated to cost the industry as much as $233,100 per well or about $273 million per year under the initial rule, most of which was due to maintenance activities such as acidization. It is now likely that most of these additional costs

[3] This includes BLMs estimates of reworks that would be covered by the proposed rules.

will not be incurred as the rule would generally not apply to these operations unless they are refracturing operations.

The elimination of the requirement that well operators wait an unspecified amount of time for the BLM to approve completion plans prior to the completion of each well. This provision would have imposed substantial delays on well operators leading to significantly higher drilling and capital costs. In the earlier analysis these delays were estimated to have a cost of $7,557 per well, for a total of $38.327 million. While the rule as now written still does not ensure that a well will be approved after completion, the initial analysis assumed an eventual 100 percent approval rate. Keeping that assumption means that these delay costs would no longer be incurred.

The Cost of Mechanical Integrity Tests. The BLM rejected the idea that the proposed rule would increase the cost of Mechanical Integrity Tests (MIT) since they are already required at some point in the development of each well. JDA's earlier analysis suggested that additional MIT operations would be required on 20 percent of wells prior to commencing stimulation operations, and that these tests are assumed to cost approximately $10,000 as per the BLM.[4] This would lead to a total cost of $10.116 million under the proposed rule. Assuming that the BLM is correct, and that MITs in excess of those already mandated or required by the specific characteristics of the well would not be required, there would be an additional reduction in costs of $10.116 million compared to JDA's previous analysis.

Initial Delay Costs. The BLM recognizes that it does not have the capacity to implement these regulations with its current staffing levels, but nevertheless stated in the proposed rule that the agency will be able to review the new permits in conjunction with the APD and within "normal APD processing time frames."[5] Considering that the agency already takes an average of 10 months, and often 2 or 3 years to process an APD, it is difficult to determine what a "normal APD time frame" may actually be. While it is unlikely that the additional process would take as long as the current permitting time there will undoubtedly be some delay. If for example, it took the BLM just an extra month to process an APD, the financial cost per well could be as high as $6,770 – a total of nearly $23.016 million. This includes the costs of delayed tax and royalty payments to leaseholders (primarily the federal government).

Assuming that there is only a one week delay period – not an unreasonable assumption considering the amount of paperwork and testing that needs to be completed – the cost of delay would average about $1,580 per well.[6] Even using the lower figure this equals over $5.632 million in additional costs, a figure which is included in this report.

Administrative Costs. The BLM recognized our administrative cost assumption in its revised rule, and therefore, we do not believe that there would be any changes in the administrative burden as a result of the revisions to the rule that would reduce JDA's previously calculated figure. Also, there are no changes to the rule pertaining to the additional time that it would take before the approval of an Application for Permit to Drill (APD). Based on a cost of $495 per

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4 Ibid.

5 See: US Bureau of Land Management, *Well Stimulation Proposed Rule: Economic Analysis and Initial Regulatory Flexibility Analysis*, at: www.regulations.gov/#!documentDetail;D=BLM-2012-0001-0003.

6 John Dunham and Associates calculations for the Western Energy Alliance, 2012. Based on an interest rate of 7 percent to match the discount rate used in the BLM analysis.

well and assuming that 3,400 wells would be impacted, administrative costs alone will be $1.765 million.

Modification of the requirements that cement logs be required on all wells to just requiring them on representative wells. This change could lead to substantial savings over the costs of the initial rule; however, the definition of a *type well* is unclear. This could mean that cement logs would still be required on 100 percent of new wells drilled on Federal and Indian lands. Taking the agency at its word that the proposed modifications are designed to simplify the regulatory process and minimize the regulatory burden, it is likely that the actual number would be lower.

According to the BLM in its proposed rule, additional cement logs will only be required on about 8 percent of the wells (representing "type wells.") The BLM states that this is based on Automated Fluid Minerals Support System (AFMSS) data but does not provide substantive information on its calculations. Considering that modern drilling equipment and methods allow many wells to be drilled from the same platform, if one assumes that each of these wells is a *type well*, then it is likely that for every 6 to 8 wells only one cement log would be required. Taking the average of 7 would mean that this requirement would apply to just 14.29 percent of wells drilled on Federal and Indian lands. While this is more than the 8 percent assumed by the BLM, the costs from the smaller number of cement logs will be substantial. The earlier estimated cost of the CBL provision was about $776.734 million. The cost was due to the combination of three factors. First, there is an additional cement log required for the surface casing for nearly every well. Second, the analysis assumed that additional cement log wait times would be required on all wells prior to the initiation of a completion. Last, the initial analysis assumed additional cement logs would be required for intermediate casing strings. Assuming that additional cement logs are required on 8 percent of new wells the new calculated cost from this provision would be $2.603 million rather than the previously calculated $736.774 million.[7]

In addition, there are delay costs associated with the requirement that all wells have a cement log performed on surface casing – something that is rarely done in practice. While the BLM assumes that there would be minimal wait times, the analysis itself suggests that 43.3 percent of all wells are not drilled using a preset rig. In the case where a single rig is being used, it will require a minimum of 24 additional hours of complete downtime waiting for cement to dry.[8] The rental and operational costs for these rigs can vary however, the BLM claims that the cost is as low as $45,600, so the cost of delay is not simply equal to the time value of the money being invested, but rather the cost of the rig equipment itself. Based on the assumption that 24 additional down hours will occur on 43.3 percent of the covered wells, this equals as much as $5.914 million in additional costs.[9] This is in addition to the $2.6 million in additional costs for the CELs on surface and intermediate casing.

Additional Surface and Intermediate Casings. In addition, although the revised rule attempts to clarify the definition of "usable groundwater," it does not eliminate the requirement that for

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7 This includes about $100,000 in costs for a limited number of cement logs on intermediate casings.

8 The BLM assumed 24 hours in its economic impact analysis, and noted that most states require between 8 to 18 hours. Some operators have suggested that the actual downtime would be as high as 72 hours. The 24 hour figure used in this analysis is conservative and agrees with the assumptions used by the BLM. This represents only actual down time where no other work can be done on the well. For the limited number of wells that the BLM assumes will need a cement log for intermediate casings a delay time of 48 hours is used to be consistent with BLMs methodology.

9 This includes about $281,600 in delay costs for intermediate casings.

nearly all wells operators will have to run deeper surface casing, two-stage cementing on the production casing or the addition of an intermediate string of casing. Since ground water levels vary greatly across states, it is difficult to determine exactly how much additional casing will be required for an "average" well.[10] According to the BLM in its Economic Impact paper, there would be no cost related to this provision, since operators already have to protect usable ground water. This statement simply does not make sense. If the provision requires no action, the BLM should see no need for the rule.[11]

The simple fact is that the definition of "usable water" in the proposed rule is extremely broad, and could require operators to run and cement casings to depths far beyond any economically usable water. Current laws in the states require operators to case their wells to protect drinking water aquifers and other "useable" water aquifers, with the recognition that for aquifers to be deemed usable, they should also be economically viable. In North Dakota and Montana for example, water currently needs to be protected to a depth below the Pierre Shale, but the proposed rule could require an extra 3,800 feet of casing and cement in North Dakota in some circumstances.[12] Based on the broadest definition of "usable," in Wyoming water needs to be protected to a level 100 feet below the deepest water well within a one mile radius of an oil or gas well. Generally, drinking water aquifers are above 1,000 feet in Wyoming but there are exceptions.[13]

The initial analysis used an average of approximately 2,350 feet of additional intermediate casing per well in its calculations but further analysis of the rule suggests that this might be a very conservative figure. Some operators have suggested that an additional 8,000 feet of casing may be required under certain circumstances. Using the conservative figure of 2,350 feet per well of additional casing, at a cost of $37 per foot, this would add $310.064 million in costs for something that the BLM admits is not even necessary.[14]

Cost of Tanks over Pits. This was not included in the initial analysis, and JDA has not analyzed this provision of the proposed rule. According to the BLM, the cost of renting storage tanks could be about $6,000 to $17,000 per well, while the cost of lining pits is about $6,000 per pit. Storage tanks (as well as pits) could be used for multiple wells, and there would be development costs associated with both of these options. For simplicity, this analysis assumes that the

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10 It is nearly impossible to develop an exact figure for the additional casing costs required under the proposed rule. The new definition of "usable water" is so broad that in practical terms, casings may be required to be run to significantly deeper depths than may be economically practical (particularly for gas wells located on federal lands.) In addition, calculating an exact figure would require an engineering examination of each of the geologic basins and the well designs in use – something which is not practical based on the available data.

11 In practice, the BLM has deferred to the states in determining what formations require additional casing in order to protect usable water, and the states have had latitude in this process. The proposed rule bases the definition of usable water solely on the total amount of dissolved solids contained in a particular formation.

12 Other areas, such as the Denver-Julesburg Basin would likely require no additional casing since they are already covered by state regulations.

13 Based on well permit data from the Wyoming State Engineer's Office, the deepest domestic ground water well in the state is 10,660 feet deep. See: https://seoweb.wyo.gov/e-Permit/common/login.aspx?ReturnUrl=/e-Permit/Default.aspx

14 This does not suggest that operators do not have an obligation to protect actual drinking water sources; however, it does show that a generalized *one-size-fits-all* rule like the one being proposed by the BEA is both practically and economically inefficient. A prescriptive rule of this nature removes the discretion that state governments have long had in determining whether or not particular formations contained economically viable sources of drinking water. It should also be noted that this figure is highly subjective; however, even if the average estimate for additional casings were just one-third of what is presented here (about 800 feet), the estimated cost of the proposed rule on operators would still be greater than $100 million.

development costs would be equal between pits (which need to be dug) and tanks (which need to be plumbed). It also assumes that a tank and a pit can each be used for a given well and that the tank costs are $11,500 per well (BEA's average), the additional costs across 3,566 wells would be $19.613 million, a figure that is included in this analysis.

In sum, the above analysis suggests that these proposed regulations will have a significant impact on the oil and gas production industry even without considering future discounted costs.

About John Dunham and Associates:

John Dunham and Associates is a leading New York City based economic consulting firm specializing in the economics of fast moving issues. JDA is an expert at translating complex economic concepts into clear, easily understandable messages that can be transmitted to any audience. Our company's clients include a wide variety of businesses and organizations, including some of the largest Fortune 500 companies in America, such as:

- Altria
- Diageo
- Feld Entertainment
- Forbes Media
- MillerCoors
- Verizon
- Wegmans Stores

John Dunham is a professional economist with over 25 years of experience. He holds a Master of Arts degree in economics from the New School for Social Research as well as a Masters of Business Administration from Columbia University. He also has a professional certificate in Logistics from New York University. Mr. Dunham has worked as a manager and an analyst in both the public and private sectors. He has experience in conducting cost-benefit modeling, industry analysis, transportation analysis, economic research, and tax and fiscal analysis. As the chief domestic economist for Philip Morris, he developed tax analysis programs, increased cost-center productivity, and created economic research operations. He has presented testimony on economic and technical issues in federal court and before federal and state agencies.

Prior to Phillip Morris John was an economist with the Port Authority of New York and New Jersey, the Philadelphia Regional Port Authority and the City of New York.

OFFICE OF THE GOVERNOR
STATE OF MONTANA

STEVE BULLOCK
GOVERNOR

JOHN WALSH
LT. GOVERNOR

August 23, 2013

The Honorable Sally Jewell, Secretary
U.S. Department of the Interior
1849 C Street NW
Washington, D.C. 20240

Re: Proposed Rules on Hydraulic Fracturing

Dear Secretary Jewell:

I am writing to express my deep concern about the proposed hydraulic fracturing rules. I believe the proposed rules impose a redundant regulatory process that, in Montana, will offer little in the way of improvements in the protection of human health and safety or involvement of the public. Hydraulic fracturing and the associated technology of horizontal drilling are of critical importance to the ongoing success of oil shale development in Montana. The proposed rules seem likely to adversely affect permit timeliness, increase confusion and potential non-compliance in the regulated community, and cause operators to choose locations that avoid federal property rather than best recover the resource.

Montana has a good record regulating hydraulic fracturing and associated technologies. Hydraulic fracturing is a customized technique that requires knowledge of the specific and unique geologic setting in which it is conducted. State regulators use that specific knowledge to effectively regulate these activities, and the Bureau of Land Management (BLM) should take advantage of that existing state expertise. In fact, the State of Montana and BLM have had a Memorandum of Understanding in place since 1992 recognizing the value and importance of state expertise and leadership in these matters.

The MOU "facilitate[s] communication and coordination" between Montana's Board of Oil and Gas Conservation (BOGC) and BLM regarding spacing hearings, pooling of interests, unitization, and adoption of uniform well set-back and minimum spacing requirements. BOGC spacing and setback rules are adopted "as standard practice" by BLM, and BOGC orders are

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coordinated with BLM's needs to administer its lands inside the BOGC-approved spacing units. There is a seldom used procedure allowing BLM to object to a particular application or request for spacing/pooling. While both BLM and the BOGC retain all jurisdiction and authority, the BOGC is the lead authority and the BLM has avoided the need for duplicative rules.

In addition, the MOU also applies to Indian Trust Lands under BLM's jurisdiction and provides a public forum for hearing applications which affect those lands for which BLM has no suitable federal process. On Trust lands, the BOGC gives public notice and conducts the hearing on the application, and then defers to BLM to issue the associated determinations or orders. BLM has used this process to provide for decision-making and public involvement, and presumably found it to be sufficient for the past 21 years.

While I understand BLM's concern for those states that do not regulate hydraulic fracturing, I believe your final rules should clearly state that for those states that do regulate hydraulic fracturing, they will retain primary authority for regulating the activity on public lands through an MOU with BLM.

Based on Montana's successful partnership with BLM for well-spacing, pooling, unitization, and set-backs, it would appear that a very similar MOU process could be used to adopt the state's hydraulic fracturing rules "as standard practice," allowing for exceptions or additional process when truly needed for a particular federal purpose (including specific issues related to Indian Trust Lands, as currently recognized under the existing MOU). As with the BLM's current adoption of the Board's spacing rules, such an approach would provide consistency and predictability for the regulated community and other interested parties.

Continued responsible development of Montana's natural resources will not only help lead America to energy independence, it will create jobs, keep energy affordable, and protect our environment and way of life.

Sincerely,

STEVE BULLOCK
Governor

U.S. House of Representatives
Committee on Natural Resources
ESA Hearing, Billings, Montana
September 4th 2013

TESTIMONY of David A. Galt
Executive Director, Montana Petroleum Association

Welcome to Montana. Thank you for the time and the huge effort to hold a series of meetings in the west to learn more about sage grouse and other potential endangered species.

Chairman Hastings, members of the committee; I am Dave Galt, executive director of the Montana Petroleum Association (MPA). MPA's members include companies involved in the exploration, drilling production, transporting and refining of oil and natural gas. Montana has a long history of oil and gas production. Our first commercial was drilled in Elk Basin in 1915.

Montana State University- Billings has done extensive analysis of the economic impact of the oil and gas industry in Montana. Here are a few facts from their 2012 update published in the Treasure State Journal:

- Direct and indirect jobs supported by the industry exceed 20,000 jobs
- Total economic output from the oil and gas industry in Montana is in excess of $10 billion dollars.
- Firms, investors, and employees of Montana's oil and gas industry paid an estimated $440 million dollars in state and local taxes in 2011 -- Tax revenue that supports education, protective services, roads and a host of services.

Montana was one of only a few states that maintained a positive budget balance through the recent great recession. Montana is in the black because of the active petroleum industry. New wells, expanding refinery capacity and new pipeline systems all contribute to a robust economy in Montana. A 5% industry expansion would result in over 1000 new jobs in Montana.

I have attached three charts to help you visualize oil and gas production in Montana. The map shows oil producing areas in green, gas in red and sage grouse core areas in purple. The black dots represent wells drilled in Montana since 1915. While the purple areas represent sage grouse core areas; when you

include the rest of the sage habitat, it covers most of the eastern half of Montana except the extreme north east corner. Sage grouse management proposed by the BLM with the blessing of the US FWS is going to have a debilitating impact on Montana's oil and gas production. The other two slides illustrate oil and gas production by county in Montana. The point is that there is production and potential across Montana, not just in the "Bakken."

The potential listing of sage grouse and the Sprague's pipit pose huge problems not just for the oil and gas industry in Montana, but for all multiple-use activities, including mining and grazing. We are seeing states in the west develop plans to provide conservation measures for sage grouse that place huge tracts of land off limits to nearly all revenue-generating activities. The determination of the need to list the sage grouse has been a topic of litigation and debate for the last decade. Law suits by environmental groups have led to a "closed door" settlement by the Federal government to decide the status of many species, the sage grouse being one, petitioned for listing as threatened or endangered species. The US Fish and Wildlife Service must decide by July of 2015 if the sage grouse is endangered. In the meantime; Western States, led by Wyoming, are developing conservation plans for the grouse. At the same time the Bureau of Land Management, BLM is rushing to release revised resource plans, or amend existing plans, which contain draconian stipulations for resource development. The ink wasn't dry on Montana's 2005 conservation plan, when academics and environmental groups said the restrictions in that plan were inadequate. Wyoming took the lead to identify core areas and protect them with very strict stipulations. And now the BLM's National Technical Team (NTT) on sage grouse recommends even more stringent stipulations, despite the fact that none of the existing stipulations have any science behind them to suggest they are inadequate.

Of particular concern is that the Department of Interior, particularly the US Fish and Wildlife Service, US Geological Survey and Bureau of Land Management, have failed to utilize any type of systematic cataloging and quantitative evaluation to determine the type, extent and effectiveness of mitigation measures that have been employed by the oil and gas industry in areas where it operates. That the agencies have very little useful and site-specific data upon which to base its land management decisions, particularly with respect to oil and gas exploration and development activities, is egregious when one views the protections measure proposed by BLM in its RMP revisions and amendments. DOI is relying upon flawed data perpetuated by its National Technical Team on Sage Grouse which is highly problematic.

Studies relied upon by the NTT were significantly and scientifically flawed. Just a few of these problems are:

The Cooper Ornithological Society's Monograph: Studies in Avian Biology (monograph), used as a primary source of information by the NTT, was reviewed by the Center for Environmental Science, Accuracy and Reliability (CESAR) in a paper [1] which found that the monograph relied upon:

- Significant mischaracterization of previous research;
- Substantial errors and omissions;
- Lack of independent authorship and peer review (3 of the authors of the NTT are also the authors, researchers, and editors on 3 of the most cited sources in the NTT.)
- Methodological bias;
- A lack of reproducibility;
- Invalid assumptions and analysis; and
- Inadequate data.

The NTT also insisted upon repeatedly citing Holloran's 2005 dissertation[2] as gospel despite the fact that it failed to acknowledge the countless stipulations and mitigation measures utilized by the oil and gas industry throughout sage grouse habitat. It is critically important to recognize that the focus of this study was limited to an unmitigated control area which was to be used as a basis for comparison to areas where mitigation was being employed. Not surprisingly, Holloran's predictions of catastrophic population decline have been clearly refuted by the data. Specifically, he predicted population declines of between negative 8.7 percent to negative 24.4 percent annually in Pinedale (page 82, Table 2). However, those doom and gloom population predictions have simply failed to come true. Instead sage grouse populations in these areas have been continually increasing, and are well above statewide averages.

Analyses of lek count data by the State of Wyoming show that lek-attendance trends have been increasing since 1990 and their densities are the highest in the state. In fact, a separate analysis by

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[1] Science or Advocacy? Ecology and Conservation of Greater Sage-Grouse: A Landscape Species and its Habitats: An Analysis of the four most influential chapters of the monograph

[2] (Holloran, M. J. 2005. Greater sage-grouse (Centrocercus urophasianus) population response to natural gas field development in western Wyoming. PhD Dissertation. University of Wyoming. Laramie, Wyoming.)

Renee Taylor of Taylor Environmental Inc. has shown that there is no statistically significant difference between the average number of male sage grouse in areas affected by oil and gas in both the Pinedale and control areas. If Holloran's predictions were true, there would only be a handful of birds left around Pinedale. Clearly, Holloran and his approach were wrong.

A report[3] prepared using Wyoming Game and Fish sage-grouse data clearly demonstrates the significance of precipitation levels with respect to sage-grouse population arcs. While weather and precipitation levels cannot be controlled by the federal government, they are clearly tied to sage-grouse survival and population and must be acknowledged. Also, numerous published reports and papers have identified the significant role predation has on the survival of the sage-grouse which have not been taken into full account by the Department of Interior so that reasonable and effective measures to reduce predation can be formulated and adopted.

When BLM prepared its RMP revisions for Montana, no site-specific sage-grouse data relating to the actual study areas was used. Rather, BLM relied upon information based on studies of Sage Grouse Management Zone 1 (MZ1) as described in the NTT Report, which includes northeastern Wyoming and far western North and South Dakota. In so doing, BLM failed to ensure the accuracy needed upon which to base informed land use decisions. Although analysis of MZ1 would be appropriate as a study area for analysis of cumulative impacts to sage-grouse nation-wide, potential direct and indirect impacts to sage-grouse and sage-grouse habitat resulting from implementation of the RMP must address only those conditions and potential direct and indirect impacts specific to the specific planning areas. Consequently, MPA has asked for a redraft of all these RMP Revisions in which sage-grouse data directly applicable to the planning areas in Montana would be utilized.

It is also important to note that the NTT Report is not even supported by the Western Association of Fish and Wildlife Agencies (WAFWA) as DOI's sole source of Sage-grouse management direction. In a letter sent to the Interior Secretary on May 16, 2013 WAFWA member states made it clear that they never endorsed the sole use of the NTT or any other scientific publication. Rather, they believe that a variety of peer-reviewed publications which collectively provide the best available science for sage-grouse should have been used by BLM as the basis for conserving the Sage-grouse, thereby avoiding a listing under the Endangered Species Act (ESA). WAFWA went on to recommend that management and

[3] Draught and Wildlife Survival – Wyoming Game and Fish Department, Sage Grouse Precipitation Drought Index

regulatory mechanisms should be based upon the best available science which would provide the best strategy for near- and long-term management of sage-grouse and provides the best opportunity for precluding the need to list the species under the ESA.

We point out that the International Research Center for Energy and Economic Development (ICEED peer reviewed a paper entitled "Oil and Gas Development and Greater Sage Grouse (Centrocercus urophasianus): A Review of Threats and Mitigation Measures," Volume 35, Number 1, which was published by The Journal of Energy and Development. The paper pointed out that:

"Current stipulations and regulations for oil and gas development in sage grouse habitat are largely based on studies from the Jonah Gas Field and Pinedale anticline. These fields, and their effect on sage grouse, are not necessarily representative of sage grouse responses to less intensive energy development. Recent environmental regulations and newer technologies have lessened the threats to sage grouse."

As a result of BLM's reliance upon the NTT Report and its recommendations, new oil and gas leasing, exploration and development in Montana will be essentially terminated in areas within sage grouse habitat if the measures proposed by BLM in its RMP revisions are adopted. Specifically, BLM has proposed the use of new No Surface Occupancy (NSO) stipulations on millions of acres of public lands as well as private surface/federal minerals ostensibly to protect sage grouse and its habitat. NSO stipulations, which prevent the use of the surface area of the lease, would be imposed on 50 percent of the public lands in the Miles City FO, 70 percent in the HiLine FO and 60 percent in the Billings FO. Added to that, in the Billing Field Office, BLM is attempting to force the use of the same stipulations upon federal minerals under private surface. We expect similar constraints to be used in the other field offices as well. BLM also proposes to make sizeable portions of these areas off-limits to new right-of-way construction and even goes so far as considering forcing the removal and replacement of existing rights-of-way to areas outside sage grouse habitat.

In conclusion, while we support efforts to avoid a listing of the Greater Sage-grouse as a threatened or endangered species, we are disturbed that the DOI has embraced the notion that habitat destruction is the single most important factor impacting the sage-grouse, particularly that from oil and gas development, which as pointed out earlier in this testimony has been proven to be a fallacy. While we acknowledge that unmitigated habitat destruction may play a role, albeit much more limited than

acknowledged by the agencies, in the survival of the sage-grouse, weather and predation are extremely important factors that have been essentially ignored by the agencies when determining how best to manage habitat. To date, DOI's focus has been to find ways to prevent or minimize human uses of habitat based upon flawed studies and reviews contained in the NTT Report. Nevertheless, it is patently obvious that DOI's tunnel vision will not result in essential improvements to the widespread degraded habitat managed by federal agencies nor will it address the significant problem of extensive predation throughout the Western states. Instead, it will shift DOI's burden and responsibilities to public land users in discrete areas where they have activities while failing to address the problem as a whole. Nevertheless, the Greater Sage-grouse will continue to survive to the best of its ability while the economy of the public lands states will suffer draconian declines due to unjustified limits on multiple-use and revenue generating activities.